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# PHASE II ENVIRONMENTAL BASELINE SURVEY OF McCORMICK RANCH, KIRTLAND AIR FORCE BASE, NEW MEXICO

Part 4 of 5

Grace Hagaraty  
Jeff Johnson  
Pete Middlebrooks

GRAM, Inc  
8500 Menaul Blvd NE  
Albuquerque, NM 87112

31 January 1996

Final Report

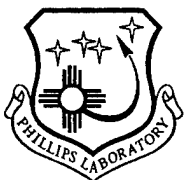
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Support Directorate  
AIR FORCE MATERIEL COMMAND  
KIRTLAND AIR FORCE BASE, NM 87117-5776

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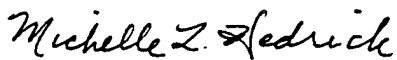
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This report has been approved for publication.

  
CARLA J. DOGGETT  
Project Manager

FOR THE COMMANDER

  
MICHELLE L. HEDRICK, GS-13  
Chief, Safety & Environmental  
Office

  
JAMES D. LEDBETTER, Col, USAF  
Director, Support Directorate

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<b>1. Report Date (dd-mm-yy)</b> 31 January 1996		<b>2. Report Type</b> Final Report		<b>3. Dates covered (from... to )</b> Oct 93 - Jan 95	
<b>4. Title &amp; subtitle</b> Phase II Environmental Baseline Survey of McCormick Ranch, Kirtland AFB, NM , Part 4 of 5				<b>5a. Contract or Grant #</b> F29601-93-C-0219	
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<b>6. Author(s)</b> Grace Hagaraty, GRAM, Inc. Jeff Johnson, GRAM, Inc. Pete Middlebrooks, LATA				<b>5c. Project #</b> 9993	
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<b>7. Performing Organization Name &amp; Address</b> GRAM, Inc. 8500 Menaul Blvd. N.E. Albuquerque, New Mexico 87112				<b>8. Performing Organization Report #</b>	
<b>9. Sponsoring/Monitoring Agency Name &amp; Address</b> Phillips Laboratory 3550 Aberdeen Avenue, SE Kirtland AFB, NM 87117-5776				<b>10. Monitor Acronym</b> SE	
				<b>11. Monitor Report #</b> PL-TR-95-1042, Part 4 of 5	
<b>12. Distribution/Availability Statement</b> Approved for Public Release; Distribution is Unlimited					
<b>13. Supplementary Notes</b> Work done in association with Los Alamos Technical Associates					
<b>14. Abstract</b> The Phase II EBS results document the extent of environmental contamination believed to be present on McCormick Ranch. Explosive test areas having the greatest potential for containing soil contaminants were identified using the following geophysical survey methods: EM 31 terrain conductivity meter, magnetometer/gradiometer, and ground penetrating radar. From the geophysical surveys five areas were selected to conduct further environmental analysis. A total of 310 soil samples were collected from the five areas and 13 specific high explosive test sites. The samples were screened for semi-volatile organic compounds, PETN, TNT, TNT-degradation products, nitrates and radioactivity. Laboratory analyses were performed and no explosives or degradation products were identified. Semi-volatile organic compounds were found in 2 samples, manganese was detected in 3 samples, nitrates were discovered below soil action levels and radiation levels were below background. Consequently, it is unlikely that significant contamination exists.					
<b>15. Subject Terms</b> McCormick Ranch, Environmental Baseline Survey, Contamination					
<b>16. Report</b> Unclassified		<b>17. Abstract</b> Unclassified		<b>18. This Page</b> Unclassified	
<b>19. Limitation of Abstract</b>  Unlimited			<b>20. # of Pages</b> 294		<b>21. Responsible Person</b> (Name and Telephone #)  Michelle Hedrick 505-846-4574



September 30, 1994  
QUANTERRA PROJECT NUMBER: 077428  
PO/CONTRACT: 06

Mr. Jeff Johnson  
Gram, Inc.  
8500 Manual Blvd. NE, #B-370  
Albuquerque, New Mexico 87112

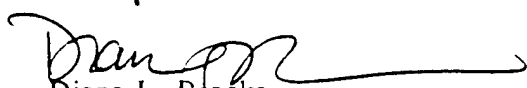
Dear Mr. Johnson:

This report contains the analytical results for the ten soil samples which were received under chain of custody by Quanterra West Sacramento on 30 August 1994. These samples are associated with your McCormick Ranch, Kirkland AFB project.

The case narrative is an integral part of this report.

If you have any questions, please call me at (916) 374-4362.

Sincerely,

  
Diana L. Brooks  
Project Manager

kw

Enseco - CAL  
2544 Industrial Blvd.  
West Sacramento, CA 95691-3435  
(916) 372-1393  
FAX (916) 372-7768

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## CASE NARRATIVE

### QUANTERRA PROJECT NUMBER 077428

#### General Comments

The temperature blank associated with your samples was recorded as 3.5 deg C. The ambient temperature was 5.3 deg C.

#### Nitroaromatics and Nitramines by HPLC - Method 8330

The matrix spike/matrix spike duplicate has a tetryl recovery above the control limits. The samples were re-injected and the recoveries were confirmed.

#### Semivolatile Organics - Method 8270

The laboratory control sample has benzoic acid reported as NA. The actual value recovered (43%) is within the control limits. Noted in the QAPjP, this compound is flagged for a variance.

Due to electronic deliverable limitations, the library search data is available in hardcopy format only.

The method blank 2-Fluorobiphenyl surrogate recovery is above the control limits. Re-injections on different instruments have resulted in similar recoveries. The samples associated with this blank have no positive detections. The initial analysis has been reported.

#### Metals - Various Methods

The ICAP antimony matrix spike/matrix spike duplicate recoveries are outside of the control limits. Re-analysis of the pair confirm the initial recoveries. The initial analysis was reported.

The matrix spike/matrix spike duplicate for Aluminum, Calcium and Iron have recoveries outside of the control limits due to the element having a sample concentration greater than or equal to 4 times the concentration of the matrix spike.



**CASE NARRATIVE - cont.**

**QUANTERRA PROJECT NUMBER 077428**

**Metals - Various Methods cont.**

The thallium matrix spike/matrix spike duplicate have recoveries below the control limits. The re-analysis yielded recoveries within the control limits. The re-analysis was reported.

Analysis for thallium was performed by graphite furnace in order to achieve detection levels required by the QAPjP.

**Inorganics - Various Methods**

The Nitrate plus Nitrite laboratory control sample was mis-spiked at 12.5 mg/Kg due to a misinterpretation of the QAPjP.

The matrix spike/matrix spike duplicate recoveries were not calculated due to the sample value being 4 times the concentration of the matrix spike.

There were no other anomalies associated with this report.

## QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documental quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

### Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

**Duplicate Control Samples.** A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

**Single Control Samples.** An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

**Method Blank Results.** A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

# CHAIN OF CUSTODY

NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

PROJECT NAME:	McCormick Ranch	# OF CONTAINERS:	1	2	3	4	5	6	7
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS:	1						
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 305-299-1282	CONTAINER VOLUME:	16oz						
SECONDARY CONTACT:	STEVE GORIN (LATA) 305-880-1439	PRESERVATIVE:	4% C						
LABORATORY CONTACT:		ANALYSES REQUESTED:	1	2	3	4	5	6	7
SAMPLE IDENTIFICATION		DATE/TIME COLLECTED							
ID, LOCATION ID, SAMPLE ID)		MATRIX							
LD154 - 0081 - 00001		S	8/25/94 1030	✓	✓	✓	✓	✓	✓
LD154 - 0084 - 00001		S	8/25/94 1207	✓	✓	✓	✓	✓	✓
LD154 - 0084 - 00002		S	8/25/94 1207	✓	✓	✓	✓	✓	✓
LD154 - 0276 - 00001		S	8/25/94 0915	✓	✓	✓	✓	✓	✓
LD154 - 0284 - 00001		S	8/25/94 0820	✓	✓	✓	✓	✓	✓
LD154 - 0284 - 00001 MS/MSD		S	8/25/94 0820	✓	✓	✓	✓	✓	✓
LD154 - 0151 - 00001		S	8/26/94 0900	✓	✓	✓	✓	✓	✓
LD154 - 0157 - 00001		S	8/26/94 1100	✓	✓	✓	✓	✓	✓
LD154 - 0160 - 00001		S	8/26/94 1213	✓	✓	✓	✓	✓	✓
LD154 - 0161 - 00001		S	8/26/94 1235	✓	✓	✓	✓	✓	✓
LD154 - 0165 - 00001		S	8/26/94 1340	✓	✓	✓	✓	✓	✓

## LABORATORY ANALYSES:

- EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)
- NITRATE + NITRITE (E333.2)
- SEMI-VOCs (SW8270)
- ICP METALS (SW6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY
- MERCURY (SW7471)
- LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740)
- CYANIDE (SW9012)

## CONTAINER TYPES:

- P - POLYETHYLENE
- CO - CLEAR GLASS
- AO - AMBER GLASS

FOR SOIL SAMPLES ONLY ONE 16-oz GLASS JAR OF SOIL AT  
REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL  
LYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE  
IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-7)

Samples rec'd in good  
condition 8/30/94  
Samples logged in  
according to Collection  
date / time 8/30/94

## RELINQUISHED BY:

COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE	DATE	TIME
PH	James D. Dorton	LATA	R. E. L. Allen	8/29/94	1540

## RELEASED TO SHIPPER BY:

COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE	BILL OF LADING #	DATE	TIME
PH	R. E. L. Allen	Fedex	R. E. L. Allen	1769646524	8/29/94	1500

## RELEASED TO LABORATORY BY (SHIPPER):

COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE	DATE	TIME
		Quanta Services		8/30/94	0905

## RECEIVED BY LABORATORY:

SAMPLE DESCRIPTION INFORMATION  
for  
Gram, Inc.

Lab ID	Client ID		Matrix	Sampled Date	Time	Received Date
077428-0001-SA	02760001	(2.00,6.00,)	SOIL	24 AUG 94	09:15	30 AUG 94
077428-0002-SA	02840001	(2.00,6.00,)	SOIL	25 AUG 94	08:20	30 AUG 94
077428-0002-MS	02840001	(2.00,6.00,)	SOIL	25 AUG 94	08:20	30 AUG 94
077428-0002-SD	02840001	(2.00,6.00,)	SOIL	25 AUG 94	08:20	30 AUG 94
077428-0003-SA	00810001	(2.00,6.00,)	SOIL	25 AUG 94	10:30	30 AUG 94
077428-0004-SA	00840001	(2.00,6.00,)	SOIL	25 AUG 94	12:07	30 AUG 94
077428-0005-SA	00840002	(2.00,6.00,)	SOIL	25 AUG 94	12:07	30 AUG 94
077428-0006-SA	01510001	(2.00,6.00,)	SOIL	26 AUG 94	09:00	30 AUG 94
077428-0007-SA	01570001	(2.00,6.00,)	SOIL	26 AUG 94	11:00	30 AUG 94
077428-0008-SA	01600001	(2.00,6.00,)	SOIL	26 AUG 94	12:13	30 AUG 94
077428-0009-SA	01610001	(2.00,6.00,)	SOIL	26 AUG 94	12:35	30 AUG 94
077428-0010-SA	01650001	(2.00,6.00,)	SOIL	26 AUG 94	13:40	30 AUG 94

## Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

## Method 8321

Client Name: Gram, Inc.

Client ID: 02760001 (2.00,6.00,)

Lab ID: 077428-0001-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 24 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected

NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

## Method 8321

Client Name: Gram, Inc.

Client ID: 02840001 (2.00,6.00,)

Lab ID: 077428-0002-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 25 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected

NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

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## Method 8321

Client Name: Gram, Inc.  
Client ID: 00810001 (2.00,6.00,)  
Lab ID: 077428-0003-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 25 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

## Method 8321

Client Name: Gram, Inc.  
Client ID: 00840001 (2.00,6.00,)  
Lab ID: 077428-0004-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 25 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
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## Method 8321

Client Name: Gram, Inc.  
Client ID: 00840002 (2.00,6.00,)  
Lab ID: 077428-0005-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 25 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Service

Method 8321

Client Name: Gram, Inc.  
Client ID: 01510001 (2.00,6.00,)  
Lab ID: 077428-0006-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
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## Method 8321

Client Name: Gram, Inc.  
Client ID: 01570001 (2.00,6.00,)  
Lab ID: 077428-0007-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Service

Method 8321

Client Name: Gram, Inc.  
Client ID: 01600001 (2.00,6.00,)  
Lab ID: 077428-0008-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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## Method 8321

Client Name: Gram, Inc.  
Client ID: 01610001 (2.00,6.00,)  
Lab ID: 077428-0009-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Service

Method 8321

Client Name: Gram, Inc.  
Client ID: 01650001 (2.00,6.00,)  
Lab ID: 077428-0010-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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QC LOT ASSIGNMENT REPORT  
 Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077428-0001-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0002-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0002-MS	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0002-SD	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0003-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0004-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0005-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0006-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0007-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0008-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0009-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B
077428-0010-SA	SOIL	8321-IRP-S	02 SEP 94-7B	02 SEP 94-7B

METHOD BLANK REPORT  
Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8321-IRP-EXP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-7B QC Run: 02 SEP 94-7B			
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50
Test: 8321-IRP-EXP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-7B QC Run: 02 SEP 94-7B			
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50
Test: 8321-IRP-EXP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-7B QC Run: 02 SEP 94-7B			
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50
Test: 8321-IRP-EXP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-7B QC Run: 02 SEP 94-7B			
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50



DUPLICATE CONTROL SAMPLE REPORT  
 Special Services - LC Mass Spectrometry

Analyte	Spiked	Concentration		Measured	AVG	Accuracy		Precision (RPD)
		DCS1	DCS2			DCS	Average(%) Limits	
Category: 8321-IRP-S								
Matrix: SOIL								
QC Lot: 02 SEP 94-7B								
Concentration Units: mg/kg								
Nitroglycerin	5.0	3.67	2.86	3.27	65	65-135	25	35.0
PETN	2.5	2.29	1.72	2.00	80	65-135	29	35.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	8321-IRP-EXP-S	077428-0002-SD	02 SEP 94-78
MATRIX SPIKE	8321-IRP-EXP-S	077428-0002-MS	02 SEP 94-78

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Sample	Concentration			Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike	Matrix Dup	MS	MSD	MS	MSD	
Test: 8321-IRP-EXP-S									
Matrix SOIL									
Sample: 077428-0002									
Units: mg/kg									
Nitroglycerin	ND	2.7	2.9	5.0	5.0	54	58	7	
PETN	ND	1.6	1.5	2.5	2.5	65	61	8	

ND = Not detected.

NC = Not calculated, calculation not applicable.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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I-24

## Method 8330

Client Name: Gram, Inc.

Client ID: 02760001 (2.00,6.00,)

Lab ID: 077428-0001-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 24 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected

NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I-25

Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Service

Method 8330

Client Name: Gram, Inc.

Client ID: 02840001 (2.00,6.00,)

Lab ID: 077428-0002-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 25 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-26

## Method 8330

Client Name: Gram, Inc.

Client ID: 00810001 (2.00,6.00,)

Lab ID: 077428-0003-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 25 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I-27

## Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

## Method 8330

Client Name: Gram, Inc.  
Client ID: 00840001 (2.00,6.00,)  
Lab ID: 077428-0004-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 25 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-28



## Method 8330

Client Name: Gram, Inc.

Client ID: 00840002 (2.00,6.00,)

Lab ID: 077428-0005-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 25 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I-29

Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

Method 8330

Client Name: Gram, Inc.  
Client ID: 01510001 (2.00,6.00,)  
Lab ID: 077428-0006-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I - 30

## Method 8330

Client Name: Gram, Inc.  
Client ID: 01570001 (2.00,6.00,)  
Lab ID: 077428-0007-SA  
Matrix: SOIL  
Authorized: 30 AUG 94

Sampled: 26 AUG 94  
Prepared: 02 SEP 94

Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-31

## Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Service

Method 8330

Client Name: Gram, Inc.

Client ID: 01600001 (2.00,6.00,)

Lab ID: 077428-0008-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-32

## Method 8330

Client Name: Gram, Inc.

Client ID: 01610001 (2.00, 6.00,)

Lab ID: 077428-0009-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: 02 SEP 94

Received: 30 AUG 94

Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

Method 8330

Client Name: Gram, Inc.  
Client ID: 01650001 (2.00,6.00,)  
Lab ID: 077428-0010-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: 02 SEP 94  
Received: 30 AUG 94  
Analyzed: 07 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

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QC LOT ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077428-0001-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0002-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0002-MS	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0002-SD	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0003-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0004-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0005-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0006-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0007-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0008-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0009-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A
077428-0010-SA	SOIL	8330-IRP-S	02 SEP 94-7A	02 SEP 94-7A

METHOD BLANK REPORT  
Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8330-IRP-KAFB-1C-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-7A QC Run: 02 SEP 94-7A			
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

Test: 8330-IRP-KAFB-1C-S  
Matrix: SOIL  
QC Lot: 02 SEP 94-7A QC Run: 02 SEP 94-7A

HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

Test: 8330-IRP-KAFB-1C-S  
Matrix: SOIL  
QC Lot: 02 SEP 94-7A QC Run: 02 SEP 94-7A

HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25

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METHOD BLANK REPORT  
 Special Services - LC Mass Spectrometry (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8330-IRP-KAFB-1C-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-7A QC Run: 02 SEP 94-7A			
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

Test: 8330-IRP-KAFB-1C-S  
 Matrix: SOIL  
 QC Lot: 02 SEP 94-7A QC Run: 02 SEP 94-7A

HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

LABORATORY CONTROL SAMPLE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 8330-IRP-S Explosives by HPLC				
Matrix: SOIL				
QC Lot: 02 SEP 94-7A      QC Run: 02 SEP 94-7A				
Concentration Units: mg/kg				
HMX	1.00	0.762	76	75-107
sym-Trinitrobenzene	1.00	0.808	81	65-135
RDX	1.00	0.765	76	70-99
1,3-Dinitrobenzene	1.00	0.748	75	74-99
Nitrobenzene	1.00	0.713	71	71-95
2,4,6-Trinitrotoluene	1.00	0.845	84	75-107
Tetryl	1.00	1.12	112	65-135
2,4-Dinitrotoluene	1.00	0.754	75	72-106
2,6-Dinitrotoluene	1.00	0.761	76	66-102
2-Am-DNT	0.00	NA	NC	77-101
4-Am-DNT	0.00	NA	NC	77-108
2-Nitrotoluene	1.00	0.740	74	72-97
4-Nitrotoluene	1.00	0.755	76	67-110
3-Nitrotoluene	1.00	0.769	77	75-104

N = Not Applicable  
N = Not Calculated, calculation not applicable.  
ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	8330-IRP-KAFB-1C-S	077428-0002-SD	02 SEP 94-7A
MATRIX SPIKE	8330-IRP-KAFB-1C-S	077428-0002-MS	02 SEP 94-7A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Sample	Concentration		Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup	MS	MSD	MS	MSD	
Test: 8330-IRP-KAFB-1C-S								
Matrix SOIL								
Sample: 077428-0002								
Units: mg/kg								
HMX	ND	0.78	0.84	1.0	1.0	78	84	8
sym-Trinitrobenzene	ND	0.83	0.92	1.0	1.0	83	92	11
RDX	ND	0.73	0.79	1.0	1.0	73	79	8
1,3-Dinitrobenzene	ND	0.76	0.84	1.0	1.0	76	84	11
Nitrobenzene	ND	0.74	0.82	1.0	1.0	74	82	10
2,4,6-Trinitrotoluene	ND	0.92	1.0	1.0	1.0	92	101	10
Tetryl	ND	1.3	1.4	1.0	1.0	132	145	9
2,4-Dinitrotoluene	ND	0.79	0.87	1.0	1.0	79	87	9
2,6-Dinitrotoluene	ND	0.80	0.87	1.0	1.0	80	87	9
2-Nitrotoluene	ND	0.81	0.89	1.0	1.0	81	89	9
3-Nitrotoluene	ND	0.79	0.87	1.0	1.0	79	87	10
4-Nitrotoluene	ND	0.82	0.91	1.0	1.0	82	91	10

ND = Not detected.

NC = Not calculated, calculation not applicable.

All calculations are performed before rounding to avoid round-off errors in calculated results.

## Semivolatile Organics

Enseco  
 Caring Environmental Services

## Method 8270

Client Name: Gram, Inc.

Client ID: 01570001 (2.00,6.00,)

Lab ID: 077428-0007-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: 07 SEP 94

Received: 30 AUG 94

Analyzed: 15 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.72
Acenaphthylene	ND	mg/kg	0.72
Anthracene	ND	mg/kg	0.72
Benzo(a)anthracene	ND	mg/kg	0.72
Benzo(a)pyrene	ND	mg/kg	0.72
Benzo(b)fluoranthene	ND	mg/kg	0.72
Benzo(g,h,i)perylene	ND	mg/kg	0.72
Benzo(k)fluoranthene	ND	mg/kg	0.72
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.3
4-Bromophenyl phenyl ether	ND	mg/kg	0.72
Butyl benzyl phthalate	ND	mg/kg	0.72
4-Chloroaniline	ND	mg/kg	1.3
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.72
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.72
bis(2-Chloroethyl) ether	ND	mg/kg	0.72
4-Chloro-3-methylphenol	ND	mg/kg	1.3
2-Chloronaphthalene	ND	mg/kg	0.72
2-Chlorophenol	ND	mg/kg	0.34
4-Chlorophenyl phenyl ether	ND	mg/kg	0.72
Chrysene	ND	mg/kg	0.72
Di-n-butyl phthalate	ND	mg/kg	0.72
Dibenz(a,h)anthracene	ND	mg/kg	0.72
Dibenzofuran	ND	mg/kg	0.72
1,2-Dichlorobenzene	ND	mg/kg	0.72
1,3-Dichlorobenzene	ND	mg/kg	0.72
1,4-Dichlorobenzene	ND	mg/kg	0.72
3,3'-Dichlorobenzidine	ND	mg/kg	1.3
2,4-Dichlorophenol	ND	mg/kg	0.34
Diethyl phthalate	ND	mg/kg	0.72
2,4-Dimethylphenol	ND	mg/kg	0.34
Dimethyl phthalate	ND	mg/kg	0.72
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.4
2,4-Dinitrophenol	ND	mg/kg	3.4
2,4-Dinitrotoluene	ND	mg/kg	0.72
2,6-Dinitrotoluene	ND	mg/kg	0.72
Di-n-octyl phthalate	ND	mg/kg	0.72

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Harlan Loui

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

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## Semivolatile Organics

Enseco  
Corning Environmental Services

## Method 8270

Client Name: Gram, Inc.

Client ID: 01570001 (2.00,6.00,)

Lab ID: 077428-0007-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: 07 SEP 94

Received: 30 AUG 94

Analyzed: 15 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	mg/kg	0.72
Fluoranthene	ND	mg/kg	0.72
Fluorene	ND	mg/kg	0.72
Hexachlorobenzene	ND	mg/kg	0.72
Hexachlorobutadiene	ND	mg/kg	0.72
Hexachlorocyclopentadiene	ND	mg/kg	0.72
Hexachloroethane	ND	mg/kg	0.72
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.72
Isophorone	ND	mg/kg	0.72
2-Methylnaphthalene	ND	mg/kg	0.72
2-Methylphenol	ND	mg/kg	0.34
4-Methylphenol	ND	mg/kg	0.34
Naphthalene	ND	mg/kg	0.72
2-Nitroaniline	ND	mg/kg	3.4
3-Nitroaniline	ND	mg/kg	3.4
4-Nitroaniline	ND	mg/kg	3.4
Nitrobenzene	ND	mg/kg	0.72
2-Nitrophenol	ND	mg/kg	0.34
4-Nitrophenol	ND	mg/kg	1.7
N-Nitrosodiphenylamine	ND	mg/kg	0.72
N-Nitroso-di-n-propylamine	ND	mg/kg	0.72
Pentachlorophenol	ND	mg/kg	3.4
Phenanthrene	ND	mg/kg	0.72
Phenol	ND	mg/kg	0.34
Pyrene	ND	mg/kg	0.72
1,2,4-Trichlorobenzene	ND	mg/kg	0.72
2,4,5-Trichlorophenol	ND	mg/kg	3.4
2,4,6-Trichlorophenol	ND	mg/kg	0.34

Surrogate	Recovery
Nitrobenzene-d5	117 %
2-Fluorobiphenyl	106 %
Terphenyl-d14	119 %
Phenol-d5	91 %
2-Fluorophenol	79 %
2,4,6-Tribromophenol	38 %

Percent Moisture is 3%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Harlan Loui

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-42

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 01570001 (2.00,6.00,)

Lab ID: 077428-0007-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: 07 SEP 94

Received: 30 AUG 94

Analyzed: 15 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	690	ug/Kg	b
Unknown Ketone	1600	ug/Kg	b
Unknown Oxygenated Compound	510	ug/Kg	b
Unknown Oxygenated Compound	270	ug/Kg	
Unknown Halogenated Benzene	490	ug/kg	
Unknown Halogenated Benzene	180	ug/kg	
Propanoic Acid, 2-Methyl-, 1-(1-Dimethylethyl)-2-methyl-	730	ug/Kg	or isomer b
Unknown	600	ug/Kg	b
Unknown	220	ug/Kg	

J-73

## Semivolatile Organics

Enseco  
Corning Environmental Services

## Method 8270

Client Name: Gram, Inc.  
Client ID: 01650001 (2.00,6.00,)  
Lab ID: 077428-0010-SA  
Matrix: SOIL  
Authorized: 30 AUG 94

Sampled: 26 AUG 94  
Prepared: 07 SEP 94

Received: 30 AUG 94  
Analyzed: 15 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.74
Acenaphthylene	ND	mg/kg	0.74
Anthracene	ND	mg/kg	0.74
Benzo(a)anthracene	ND	mg/kg	0.74
Benzo(a)pyrene	ND	mg/kg	0.74
Benzo(b)fluoranthene	ND	mg/kg	0.74
Benzo(g,h,i)perylene	ND	mg/kg	0.74
Benzo(k)fluoranthene	ND	mg/kg	0.74
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.4
4-Bromophenyl phenyl ether	ND	mg/kg	0.74
Butyl benzyl phthalate	ND	mg/kg	0.74
4-Chloroaniline	ND	mg/kg	1.4
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.74
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.74
bis(2-Chloroethyl) ether	ND	mg/kg	0.74
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.74
2-Chlorophenol	ND	mg/kg	0.35
4-Chlorophenyl phenyl ether	ND	mg/kg	0.74
Chrysene	ND	mg/kg	0.74
Di-n-butyl phthalate	ND	mg/kg	0.74
Dibenz(a,h)anthracene	ND	mg/kg	0.74
Dibenzofuran	ND	mg/kg	0.74
1,2-Dichlorobenzene	ND	mg/kg	0.74
1,3-Dichlorobenzene	ND	mg/kg	0.74
1,4-Dichlorobenzene	ND	mg/kg	0.74
3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.35
Diethyl phthalate	ND	mg/kg	0.74
2,4-Dimethylphenol	ND	mg/kg	0.35
Dimethyl phthalate	ND	mg/kg	0.74
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.5
2,4-Dinitrophenol	ND	mg/kg	3.5
2,4-Dinitrotoluene	ND	mg/kg	0.74
2,6-Dinitrotoluene	ND	mg/kg	0.74
Di-n-octyl phthalate	ND	mg/kg	0.74

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Harlan Loui

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

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## Method 8270

Client Name: Gram, Inc.

Client ID: 01650001 (2.00,6.00,)

Lab ID: 077428-0010-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: 07 SEP 94

Received: 30 AUG 94

Analyzed: 15 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.74
Fluoranthene	ND	mg/kg	0.74
Fluorene	ND	mg/kg	0.74
Hexachlorobenzene	ND	mg/kg	0.74
Hexachlorobutadiene	ND	mg/kg	0.74
Hexachlorocyclopentadiene	ND	mg/kg	0.74
Hexachloroethane	ND	mg/kg	0.74
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.74
Isophorone	ND	mg/kg	0.74
2-Methylnaphthalene	ND	mg/kg	0.74
2-Methylphenol	ND	mg/kg	0.35
4-Methylphenol	ND	mg/kg	0.35
Naphthalene	ND	mg/kg	0.74
2-Nitroaniline	ND	mg/kg	3.5
3-Nitroaniline	ND	mg/kg	3.5
4-Nitroaniline	ND	mg/kg	3.5
Nitrobenzene	ND	mg/kg	0.74
2-Nitrophenol	ND	mg/kg	0.35
4-Nitrophenol	ND	mg/kg	1.7
N-Nitrosodiphenylamine	ND	mg/kg	0.74
N-Nitroso-di- n-propylamine	ND	mg/kg	0.74
Pentachlorophenol	ND	mg/kg	3.5
Phenanthrene	ND	mg/kg	0.74
Phenol	ND	mg/kg	0.35
Pyrene	ND	mg/kg	0.74
1,2,4-Trichlorobenzene	ND	mg/kg	0.74
2,4,5-Trichlorophenol	ND	mg/kg	3.5
2,4,6-Trichlorophenol	ND	mg/kg	0.35

Surrogate	Recovery
Nitrobenzene-d5	103 %
2-Fluorobiphenyl	109 %
Terphenyl-d14	130 %
Phenol-d5	85 %
2-Fluorophenol	48 %
2,4,6-Tribromophenol	26 %

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Harlan Loui

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-45

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 01650001 (2.00,6.00,)

Lab ID: 077428-0010-SA

Matrix: SOIL

Sampled: 26 AUG 94

Received: 30 AUG 94

Authorized: 30 AUG 94

Prepared: 07 SEP 94

Analyzed: 15 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	670	ug/Kg	b
Unknown Ketone	1600	ug/Kg	b
Unknown Oxygenated Compound	620	ug/Kg	b
Unknown Oxygenated Compound	440	ug/Kg	
Unknown Halogenated Benzene	660	ug/kg	
Unknown Halogenated Benzene	260	ug/kg	
Propanoic Acid, 2-Methyl-, 1-(1-Dimethylethyl)-2-methyl-	390	ug/Kg	or isomer b
Unknown	280	ug/Kg	b
Unknown alkane	230	ug/Kg	
Unknown	140	ug/Kg	

F-4/6

QC LOT ASSIGNMENT REPORT  
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077428-0007-SA	SOIL	8270-IRPSL	07 SEP 94-11A	07 SEP 94-11A
077428-0010-SA	SOIL	8270-IRPSL	07 SEP 94-11A	07 SEP 94-11A

I-417

METHOD BLANK REPORT  
Semivolatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 07 SEP 94-11A QC Run: 07 SEP 94-11A			
Acenaphthene	ND	mg/kg	0.70
Acenaphthylene	ND	mg/kg	0.70
Anthracene	ND	mg/kg	0.70
Benzo(a)anthracene	ND	mg/kg	0.70
Benzo(a)pyrene	ND	mg/kg	0.70
Benzo(b)fluoranthene	ND	mg/kg	0.70
Benzo(g,h,i)perylene	ND	mg/kg	0.70
Benzo(k)fluoranthene	ND	mg/kg	0.70
Benzoic acid	ND	mg/kg	1.6
Benzyl alcohol	ND	mg/kg	1.3
4-Bromophenyl phenyl ether	ND	mg/kg	0.70
Butyl benzyl phthalate	ND	mg/kg	0.70
4-Chloroaniline	ND	mg/kg	1.3
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.70
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.70
bis(2-Chloroethyl) ether	ND	mg/kg	0.70
4-Chloro-3-methylphenol	ND	mg/kg	1.3
2-Chloronaphthalene	ND	mg/kg	0.70
2-Chlorophenol	ND	mg/kg	0.33
4-Chlorophenyl phenyl ether	ND	mg/kg	0.70
Chrysene	ND	mg/kg	0.70
Di-n-butyl phthalate	ND	mg/kg	0.70
Dibenz(a,h)anthracene	ND	mg/kg	0.70
Dibenzofuran	ND	mg/kg	0.70
1,2-Dichlorobenzene	ND	mg/kg	0.70
1,3-Dichlorobenzene	ND	mg/kg	0.70
1,4-Dichlorobenzene	ND	mg/kg	0.70
3,3'-Dichlorobenzidine	ND	mg/kg	1.3
2,4-Dichlorophenol	ND	mg/kg	0.33
Diethyl phthalate	ND	mg/kg	0.70
2,4-Dimethylphenol	ND	mg/kg	0.33
Dimethyl phthalate	ND	mg/kg	0.70
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.3
2,4-Dinitrophenol	ND	mg/kg	3.3
2,4-Dinitrotoluene	ND	mg/kg	0.70
2,6-Dinitrotoluene	ND	mg/kg	0.70
Di-n-octyl phthalate	ND	mg/kg	0.70

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METHOD BLANK REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 07 SEP 94-11A QC Run: 07 SEP 94-11A			
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.70
Fluoranthene	ND	mg/kg	0.70
Fluorene	ND	mg/kg	0.70
Hexachlorobenzene	ND	mg/kg	0.70
Hexachlorobutadiene	ND	mg/kg	0.70
Hexachlorocyclopentadiene	ND	mg/kg	0.70
Hexachloroethane	ND	mg/kg	0.70
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.70
Isophorone	ND	mg/kg	0.70
2-Methylnaphthalene	ND	mg/kg	0.70
2-Methylphenol	ND	mg/kg	0.33
4-Methylphenol	ND	mg/kg	0.33
Naphthalene	ND	mg/kg	0.70
2-Nitroaniline	ND	mg/kg	3.3
3-Nitroaniline	ND	mg/kg	3.3
4-Nitroaniline	ND	mg/kg	3.3
Nitrobenzene	ND	mg/kg	0.70
2-Nitrophenol	ND	mg/kg	0.33
4-Nitrophenol	ND	mg/kg	1.6
N-Nitrosodiphenylamine	ND	mg/kg	0.70
N-Nitroso-di- n-propylamine	ND	mg/kg	0.70
Pentachlorophenol	ND	mg/kg	3.3
Phenanthrene	ND	mg/kg	0.70
Phenol	ND	mg/kg	0.33
Pyrene	ND	mg/kg	0.70
1,2,4-Trichlorobenzene	ND	mg/kg	0.70
2,4,5-Trichlorophenol	ND	mg/kg	3.3
2,4,6-Trichlorophenol	ND	mg/kg	0.33

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: SBLK7 07SEP94-11A

Lab ID: Method Blank

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: 07 SEP 94

Received: 30 AUG 94

Analyzed: 15 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	690	ug/Kg	
Unknown Ketone	820	ug/Kg	
Unknown Oxygenated Compound	740	ug/Kg	
Propanoic Acid, 2-Methyl-, 1-			
(1-Dimethylethyl)-2-methyl-	380	ug/Kg	or isomer
Unknown	280	ug/Kg	

I-50

LABORATORY CONTROL SAMPLE REPORT  
Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits

Category: 8270-IRPSL Semivolatile Organics  
(Contain all compounds for IRPMS Low soil)

Matrix: SOIL

QC Lot: 07 SEP 94-11A QC Run: 07 SEP 94-11A

Concentration Units: mg/kg

Phenol	6.70	6.60	99	41-123
bis(2-Chloroethyl) ether	3.30	3.80	115	43-117
2-Chlorophenol	6.70	6.68	100	44-116
1,3-Dichlorobenzene	3.30	3.17	96	39-106
1,4-Dichlorobenzene	3.30	3.22	98	40-106
Benzyl alcohol	3.30	3.64	110	37-125
1,2-Dichlorobenzene	3.30	3.32	101	40-107
2-Methylphenol	6.70	6.43	96	44-128
2,2'-Oxybis(1-chloropropene)	3.30	3.62	110	38-116
4-Methylphenol	6.70	6.78	101	36-138
N-Nitroso-di-n-propylamine	3.30	3.98	121	43-123
Hexachloroethane	3.30	3.20	97	39-106
Nitrobenzene	3.30	3.47	105	35-180
Isophorone	3.30	0.775	23	20-134
2-Nitrophenol	6.70	5.68	85	40-128
2,4-Dimethylphenol	6.70	6.14	92	38-127
Benzoic acid	6.70	NA	NC	1-137
bis(2-Chloroethoxy)-methane	3.30	3.57	108	40-117
2,4-Dichlorophenol	6.70	6.38	95	34-129
1,2,4-Trichlorobenzene	3.30	3.27	99	36-114
Naphthalene	3.30	3.34	101	41-108
4-Chloroaniline	3.30	0.953	29	0-63
Hexachlorobutadiene	3.30	3.13	95	33-114
4-Chloro-3-methylphenol	6.70	6.98	104	33-143
2-Methylnaphthalene	3.30	3.39	103	0-197
Hexachlorocyclopentadiene	3.30	2.82	85	29-111
2,4,6-Trichlorophenol	6.70	7.12	106	41-132
2,4,5-Trichlorophenol	6.70	4.76	71	36-129
2-Chloronaphthalene	3.30	3.35	102	40-119
2-Nitroaniline	3.30	3.77	114	45-129
Dimethyl phthalate	3.30	3.39	103	48-116
Acenaphthylene	3.33	3.36	101	43-114
2,6-Dinitrotoluene	3.30	2.40	73	44-127
3-Nitroaniline	3.30	2.72	82	0-119
Acenaphthene	3.30	3.26	99	41-113
2,4-Dinitrophenol	6.70	2.40	36	0-139
4-Nitrophenol	6.70	7.64	114	41-144
Dibenzofuran	3.30	3.41	103	42-116

N = Not Applicable

N = Not Calculated, calculation not applicable.

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE REPORT  
Semivolatile Organics by GC/MS

Enseco  
Corning Environmental Services

(cont.)

Analyte	Concentration		Accuracy(%) (cont.)	
	Spiked	Measured	LCS	Limits
Category: 8270-IRPSL Semivolatile Organics (Contain all compounds for IRPMS Low soil)				
Matrix: SOIL				
QC Lot: 07 SEP 94-11A QC Run: 07 SEP 94-11A				
Concentration Units: mg/kg				
2,4-Dinitrotoluene	3.30	3.55	108	43-129
Diethyl phthalate	3.30	3.52	107	46-118
Fluorene	3.30	3.28	99	43-117
4-Chlorophenyl phenyl ether	3.30	3.30	100	41-120
4-Nitroaniline	3.30	3.00	91	0-189
4,6-Dinitro- 2-methylphenol	6.70	2.69	40	0-181
N-Nitrosodiphenylamine	3.30	3.65	111	9-241
4-Bromophenyl phenyl ether	3.30	3.41	103	41-126
Hexachlorobenzene	3.30	3.51	106	40-126
Pentachlorophenol	6.70	4.99	74	29-137
Phenanthrene	3.30	3.46	105	54-120
Anthracene	3.30	3.28	99	46-119
Di-n-butyl phthalate	3.30	3.43	104	44-130
Fluoranthene	3.30	3.75	114	44-126
Pyrene	3.30	2.87	87	52-115
Butyl benzyl phthalate	3.30	3.85	117	50-131
3,3'-Dichlorobenzidine	3.30	1.99	60	7-141
Benzo(a)anthracene	3.30	3.85	117	48-127
Chrysene	3.30	3.50	106	49-123
bis(2-Ethylhexyl)- phthalate	3.30	3.81	115	48-130
Di-n-octyl phthalate	3.30	4.16	126	44-137
Benzo(b)fluoranthene	3.30	3.80	115	44-136
Benzo(k)fluoranthene	3.30	3.56	108	43-127
Benzo(a)pyrene	3.30	3.48	105	46-132
Indeno(1,2,3-cd)pyrene	3.30	2.43	74	47-133
Dibenz(a,h)anthracene	3.30	2.31	70	47-129
Benzo(g,h,i)perylene	3.30	2.08	63	40-133

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

I-52



SINGLE CONTROL SAMPLE REPORT  
 Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits

Category: 8270-IRPSL

Matrix: SOIL

QC Lot: 07 SEP 94-11A QC Run: 07 SEP 94-11A

Concentration Units: mg/kg

Nitrobenzene-d5	0.33	0.37	113	38-116
2-Fluorobiphenyl	0.33	0.39	117	42-120
Terphenyl-d14	0.33	0.39	117	40-141
Phenol-d5	0.67	0.73	109	32-131
2-Fluorophenol	0.67	0.61	92	23-184
2,4,6-Tribromophenol	0.67	0.34	50	20-109

Calculations are performed before rounding to avoid round-off errors in calculated results.

I-53

I-54

## METALS

Enseco  
Corporation Environmental Services

(Soil/Solid - Total)

Client Name: Gram, Inc.  
 Client ID: 02760001 (2.00,6.00,)  
 Lab ID: 077428-0001-SA  
 Matrix: SOIL  
 Authorized: 30 AUG 94  
 Sampled: 24 AUG 94  
 Prepared: See Below  
 Received: 30 AUG 94  
 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	6960	mg/kg	52.3	6010	02 SEP 94	07 SEP 94
Antimony	ND	mg/kg	15.7	6010	02 SEP 94	07 SEP 94
Arsenic	3.3	mg/kg	2.6	7060	02 SEP 94	06 SEP 94 G
Barium	101	mg/kg	10.5	6010	02 SEP 94	07 SEP 94
Beryllium	ND	mg/kg	1.0	6010	02 SEP 94	07 SEP 94
Cadmium	ND	mg/kg	0.52	6010	02 SEP 94	07 SEP 94
Calcium	59200	mg/kg	105	6010	02 SEP 94	07 SEP 94
Chromium	6.8	mg/kg	5.2	6010	02 SEP 94	07 SEP 94
Cobalt	ND	mg/kg	5.2	6010	02 SEP 94	07 SEP 94
Copper	ND	mg/kg	5.2	6010	02 SEP 94	07 SEP 94
Iron	6600	mg/kg	5.2	6010	02 SEP 94	07 SEP 94
Lead	4.5	mg/kg	0.52	7421	02 SEP 94	03 SEP 94
Magnesium	2190	mg/kg	105	6010	02 SEP 94	07 SEP 94
Manganese	82.4	mg/kg	2.1	6010	02 SEP 94	07 SEP 94
Mercury	ND	mg/kg	0.10	7471	07 SEP 94	07 SEP 94
Molybdenum	ND	mg/kg	10.5	6010	02 SEP 94	07 SEP 94
Nickel	ND	mg/kg	15.7	6010	02 SEP 94	07 SEP 94
Potassium	1290	mg/kg	523	6010	02 SEP 94	07 SEP 94
Selenium	0.61	mg/kg	0.52	7740	02 SEP 94	03 SEP 94
Silver	ND	mg/kg	5.2	6010	02 SEP 94	07 SEP 94
Sodium	ND	mg/kg	523	6010	02 SEP 94	07 SEP 94
Thallium	ND	mg/kg	0.50	7841	02 SEP 94	21 SEP 94 q
Vanadium	14.6	mg/kg	10.5	6010	02 SEP 94	07 SEP 94
Zinc	17.2	mg/kg	2.1	6010	02 SEP 94	07 SEP 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

Note G : Reporting Limit raised due to matrix interference.

Note q : Post-digestion spike recovery fell between 40% and 85%  
 due to matrix interference.

ND = Not detected  
 NA = Not applicable

Reported By: Don Carney

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
 Rev 230787

I-55

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02840001  
Lab ID: 077428-0002-SA  
Matrix: SOIL  
Authorized: 30 AUG 94

(2.00, 6.00,)

Sampled: 25 AUG 94  
Prepared: See Below

Received: 30 AUG 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8130	mg/kg	56.4	6010	02 SEP 94	07 SEP 94
Antimony	ND	mg/kg	16.9	6010	02 SEP 94	07 SEP 94
Arsenic	3.4	mg/kg	2.8	7060	02 SEP 94	06 SEP 94 G
Barium	162	mg/kg	11.3	6010	02 SEP 94	07 SEP 94
Beryllium	ND	mg/kg	1.1	6010	02 SEP 94	07 SEP 94
Cadmium	ND	mg/kg	0.56	6010	02 SEP 94	07 SEP 94
Calcium	62900	mg/kg	113	6010	02 SEP 94	07 SEP 94
Chromium	7.8	mg/kg	5.6	6010	02 SEP 94	07 SEP 94
Cobalt	ND	mg/kg	5.6	6010	02 SEP 94	07 SEP 94
Copper	ND	mg/kg	5.6	6010	02 SEP 94	07 SEP 94
Iron	7240	mg/kg	5.6	6010	02 SEP 94	07 SEP 94
Lead	5.4	mg/kg	0.56	7421	02 SEP 94	03 SEP 94
Magnesium	2730	mg/kg	113	6010	02 SEP 94	07 SEP 94
Manganese	104	mg/kg	2.3	6010	02 SEP 94	07 SEP 94
Mercury	ND	mg/kg	0.11	7471	07 SEP 94	07 SEP 94
Molybdenum	ND	mg/kg	11.3	6010	02 SEP 94	07 SEP 94
Nickel	ND	mg/kg	16.9	6010	02 SEP 94	07 SEP 94
Potassium	1690	mg/kg	564	6010	02 SEP 94	07 SEP 94
Selenium	ND	mg/kg	0.56	7740	02 SEP 94	03 SEP 94
Silver	ND	mg/kg	5.6	6010	02 SEP 94	07 SEP 94
Sodium	ND	mg/kg	564	6010	02 SEP 94	07 SEP 94
Thallium	ND	mg/kg	0.50	7841	02 SEP 94	21 SEP 94 q
Vanadium	15.9	mg/kg	11.3	6010	02 SEP 94	07 SEP 94
Zinc	20.3	mg/kg	2.3	6010	02 SEP 94	07 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

Note G : Reporting Limit raised due to matrix interference.

Note q : Post-digestion spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected  
NA = Not applicable

Reported By: Don Carney

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

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**METALS**

**Enseco**  
Conting Environmental Services

(Soil/Solid - Total)

Client Name: Gram, Inc.  
 Client ID: 00810001 (2.00,6.00,)  
 Lab ID: 077428-0003-SA  
 Matrix: SOIL  
 Authorized: 30 AUG 94  
 Sampled: 25 AUG 94  
 Prepared: See Below  
 Received: 30 AUG 94  
 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	15400	mg/kg	57.1	6010	02 SEP 94	07 SEP 94
Antimony	ND	mg/kg	17.1	6010	02 SEP 94	07 SEP 94
Arsenic	5.0	mg/kg	2.9	7060	02 SEP 94	06 SEP 94 G
Barium	151	mg/kg	11.4	6010	02 SEP 94	07 SEP 94
Beryllium	ND	mg/kg	1.1	6010	02 SEP 94	07 SEP 94
Cadmium	ND	mg/kg	0.57	6010	02 SEP 94	07 SEP 94
Calcium	41300	mg/kg	114	6010	02 SEP 94	07 SEP 94
Chromium	14.3	mg/kg	5.7	6010	02 SEP 94	07 SEP 94
Cobalt	ND	mg/kg	5.7	6010	02 SEP 94	07 SEP 94
Copper	8.2	mg/kg	5.7	6010	02 SEP 94	07 SEP 94
Iron	12800	mg/kg	5.7	6010	02 SEP 94	07 SEP 94
Lead	11.2	mg/kg	1.1	7421	02 SEP 94	03 SEP 94 R
Magnesium	4470	mg/kg	114	6010	02 SEP 94	07 SEP 94
Manganese	241	mg/kg	2.3	6010	02 SEP 94	07 SEP 94
Mercury	ND	mg/kg	0.11	7471	07 SEP 94	07 SEP 94
Molybdenum	ND	mg/kg	11.4	6010	02 SEP 94	07 SEP 94
Nickel	ND	mg/kg	17.1	6010	02 SEP 94	07 SEP 94
Potassium	3130	mg/kg	571	6010	02 SEP 94	07 SEP 94
Selenium	ND	mg/kg	0.57	7740	02 SEP 94	03 SEP 94
Silver	ND	mg/kg	5.7	6010	02 SEP 94	07 SEP 94
Sodium	ND	mg/kg	57	6010	02 SEP 94	07 SEP 94
Thallium	ND	mg/kg	0.50	7841	02 SEP 94	21 SEP 94 q
Vanadium	24.7	mg/kg	11.4	6010	02 SEP 94	07 SEP 94
Zinc	36.1	mg/kg	2.3	6010	02 SEP 94	07 SEP 94

Percent Moisture is 12%. All results and limits are reported on a dry weight basis.

Note G : Reporting Limit raised due to matrix interference.

Note R : Raised reporting limit(s) due to high analyte level(s).

Note q : Post-digestion spike recovery fell between 40% and 85%  
 due to matrix interference.

ND = Not detected  
 NA = Not applicable

Reported By: Don Carney

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
 Rev 230787

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**METALS**

Enseco  
Corning Environmental Services

(Soil/Solid - Total)

Client Name: Gram, Inc.  
 Client ID: 00840001 (2.00,6.00,)  
 Lab ID: 077428-0004-SA  
 Matrix: SOIL  
 Authorized: 30 AUG 94  
 Sampled: 25 AUG 94  
 Prepared: See Below  
 Received: 30 AUG 94  
 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	11700	mg/kg	52.8	6010	02 SEP 94	07 SEP 94
Antimony	ND	mg/kg	15.9	6010	02 SEP 94	07 SEP 94
Arsenic	4.6	mg/kg	0.53	7060	02 SEP 94	06 SEP 94
Barium	125	mg/kg	10.6	6010	02 SEP 94	07 SEP 94
Beryllium	ND	mg/kg	1.1	6010	02 SEP 94	07 SEP 94
Cadmium	ND	mg/kg	0.53	6010	02 SEP 94	07 SEP 94
Calcium	43700	mg/kg	106	6010	02 SEP 94	07 SEP 94
Chromium	10.5	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Cobalt	ND	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Copper	6.5	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Iron	10900	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Lead	8.6	mg/kg	1.1	7421	02 SEP 94	03 SEP 94 R
Magnesium	3790	mg/kg	106	6010	02 SEP 94	07 SEP 94
Manganese	190	mg/kg	2.1	6010	02 SEP 94	07 SEP 94
Mercury	ND	mg/kg	0.11	7471	07 SEP 94	07 SEP 94
Molybdenum	ND	mg/kg	10.6	6010	02 SEP 94	07 SEP 94
Nickel	ND	mg/kg	15.9	6010	02 SEP 94	07 SEP 94
Potassium	2010	mg/kg	528	6010	02 SEP 94	07 SEP 94
Selenium	ND	mg/kg	0.53	7740	02 SEP 94	03 SEP 94
Silver	ND	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Sodium	ND	mg/kg	528	6010	02 SEP 94	07 SEP 94
Thallium	ND	mg/kg	0.50	7841	02 SEP 94	21 SEP 94 q
Vanadium	20.9	mg/kg	10.6	6010	02 SEP 94	07 SEP 94
Zinc	29.0	mg/kg	2.1	6010	02 SEP 94	07 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

Note q : Post-digestion spike recovery fell between 40% and 85%  
due to matrix interference.

ND = Not detected  
 NA = Not applicable

Reported By: Don Carney

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
 Rev 230787

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## METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 00840002 (2.00,6.00,)  
Lab ID: 077428-0005-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 25 AUG 94  
Prepared: See Below  
Received: 30 AUG 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	12900	mg/kg	53.0	6010	02 SEP 94	07 SEP 94
Antimony	ND	mg/kg	15.9	6010	02 SEP 94	07 SEP 94
Arsenic	4.4	mg/kg	0.53	7060	02 SEP 94	06 SEP 94
Barium	131	mg/kg	10.6	6010	02 SEP 94	07 SEP 94
Beryllium	ND	mg/kg	1.1	6010	02 SEP 94	07 SEP 94
Cadmium	ND	mg/kg	0.53	6010	02 SEP 94	07 SEP 94
Calcium	44500	mg/kg	106	6010	02 SEP 94	07 SEP 94
Chromium	11.4	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Cobalt	ND	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Copper	6.5	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Iron	11500	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Lead	8.2	mg/kg	1.1	7421	02 SEP 94	03 SEP 94 R
Magnesium	4040	mg/kg	106	6010	02 SEP 94	07 SEP 94
Manganese	200	mg/kg	2.1	6010	02 SEP 94	07 SEP 94
Mercury	ND	mg/kg	0.11	7471	07 SEP 94	07 SEP 94
Molybdenum	ND	mg/kg	10.6	6010	02 SEP 94	07 SEP 94
Nickel	ND	mg/kg	15.9	6010	02 SEP 94	07 SEP 94
Potassium	2240	mg/kg	530	6010	02 SEP 94	07 SEP 94
Selenium	ND	mg/kg	0.53	7740	02 SEP 94	03 SEP 94
Silver	ND	mg/kg	5.3	6010	02 SEP 94	07 SEP 94
Sodium	ND	mg/kg	530	6010	02 SEP 94	07 SEP 94
Thallium	ND	mg/kg	0.50	7841	02 SEP 94	21 SEP 94 q
Vanadium	22.9	mg/kg	10.6	6010	02 SEP 94	07 SEP 94
Zinc	30.3	mg/kg	2.1	6010	02 SEP 94	07 SEP 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

Note q : Post-digestion spike recovery fell between 40% and 85%  
due to matrix interference.

ND = Not detected  
NA = Not applicable

Reported By: Don Carney

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
Rev 230787

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QC LOT ASSIGNMENT REPORT  
 Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077428-0001-SA	SOIL	7471-IRP-S	07 SEP 94-C	07 SEP 94-C
077428-0001-SA	SOIL	7421-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0001-SA	SOIL	7060-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0001-SA	SOIL	7740-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0001-SA	SOIL	ICP-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0001-SA	SOIL	7841-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0002-SA	SOIL	7471-IRP-S	07 SEP 94-C	07 SEP 94-C
077428-0002-SA	SOIL	7421-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-SA	SOIL	7060-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-SA	SOIL	7740-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-SA	SOIL	ICP-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0002-SA	SOIL	7841-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0002-MS	SOIL	7471-IRP-S	07 SEP 94-C	07 SEP 94-C
077428-0002-MS	SOIL	7421-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-MS	SOIL	7060-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-MS	SOIL	7740-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-MS	SOIL	ICP-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0002-MS	SOIL	7841-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0002-SD	SOIL	7471-IRP-S	07 SEP 94-C	07 SEP 94-C
077428-0002-SD	SOIL	7421-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-SD	SOIL	7060-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-SD	SOIL	7740-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0002-SD	SOIL	ICP-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0002-SD	SOIL	7841-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0003-SA	SOIL	7471-IRP-S	07 SEP 94-C	07 SEP 94-C
077428-0003-SA	SOIL	7421-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0003-SA	SOIL	7060-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0003-SA	SOIL	7740-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0003-SA	SOIL	ICP-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0003-SA	SOIL	7841-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0004-SA	SOIL	7471-IRP-S	07 SEP 94-C	07 SEP 94-C
077428-0004-SA	SOIL	7421-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0004-SA	SOIL	7060-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0004-SA	SOIL	7740-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0004-SA	SOIL	ICP-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0004-SA	SOIL	7841-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0005-SA	SOIL	7471-IRP-S	07 SEP 94-C	07 SEP 94-C
077428-0005-SA	SOIL	7421-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0005-SA	SOIL	7060-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0005-SA	SOIL	7740-IRP-S	02 SEP 94-TX	02 SEP 94-TX
077428-0005-SA	SOIL	ICP-IRP-S	02 SEP 94-T	02 SEP 94-T
077428-0005-SA	SOIL	7841-IRP-S	02 SEP 94-T	02 SEP 94-T

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METHOD BLANK REPORT  
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: HG-CVAA-IRP-S			
Matrix: SOIL			
QC Lot: 07 SEP 94-C QC Run: 07 SEP 94-C			
Mercury	ND	mg/kg	0.10
Test: PB-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX			
Lead	ND	mg/kg	0.50
Test: AS-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX			
Arsenic	ND	mg/kg	0.50
Test: SE-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX			
Selenium	ND	mg/kg	0.50
Test: ICP-IRPMS-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-T QC Run: 02 SEP 94-T			
Aluminum	ND	mg/kg	50.0
Antimony	ND	mg/kg	15.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	1.0
Cadmium	ND	mg/kg	0.50
Calcium	ND	mg/kg	100
Chromium	ND	mg/kg	5.0
Cobalt	ND	mg/kg	5.0
Copper	ND	mg/kg	5.0
Iron	ND	mg/kg	5.0
Magnesium	ND	mg/kg	100
Manganese	ND	mg/kg	2.0
Molybdenum	ND	mg/kg	10.0

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METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-IRPMS-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-T QC Run: 02 SEP 94-T			
Nickel	ND	mg/kg	15.0
Potassium	ND	mg/kg	500
Silver	ND	mg/kg	5.0
Sodium	ND	mg/kg	500
Vanadium	ND	mg/kg	10.0
Zinc	ND	mg/kg	2.0
Test: TL-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-T QC Run: 02 SEP 94-T			
Thallium	ND	mg/kg	0.50
Test: HG-CVAA-IRP-S			
Matrix: SOIL			
QC Lot: 07 SEP 94-C QC Run: 07 SEP 94-C			
Mercury	ND	mg/kg	0.10
Test: PB-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX			
Lead	ND	mg/kg	0.50
Test: AS-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX			
Arsenic	ND	mg/kg	0.50

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METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
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Test: SE-FAA-IRP-S

Matrix: SOIL

QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX

Selenium	ND	mg/kg	0.50
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Test: ICP-IRPMS-S

Matrix: SOIL

QC Lot: 02 SEP 94-T QC Run: 02 SEP 94-T

Aluminum	ND	mg/kg	50.0
Antimony	ND	mg/kg	15.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	1.0
Cadmium	ND	mg/kg	0.50
Calcium	ND	mg/kg	100
Chromium	ND	mg/kg	5.0
Cobalt	ND	mg/kg	5.0
Copper	ND	mg/kg	5.0
Iron	ND	mg/kg	5.0
Magnesium	ND	mg/kg	100
Manganese	ND	mg/kg	2.0
Molybdenum	ND	mg/kg	10.0
Nickel	ND	mg/kg	15.0
Potassium	ND	mg/kg	500
Silver	ND	mg/kg	5.0
Sodium	ND	mg/kg	500
Vanadium	ND	mg/kg	10.0
Zinc	ND	mg/kg	2.0

Test: TL-FAA-IRP-S

Matrix: SOIL

QC Lot: 02 SEP 94-T QC Run: 02 SEP 94-T

Thallium	ND	mg/kg	0.50
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LABORATORY CONTROL SAMPLE REPORT  
Metals Analysis and Preparation

Analyte	Concentration Spiked Measured		Accuracy(%) LCS Limits	
Category: 7471-IRP-S Mercury by CVAA STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 07 SEP 94-C QC Run: 07 SEP 94-C				
Concentration Units: mg/kg				

Mercury	32.0	34.5	108	75-125
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Analyte	Concentration Spiked Measured		Accuracy(%) LCS Limits	
Category: 7421-IRP-S Lead, Furnace AA STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX				
Concentration Units: mg/kg				

Lead	50.9	58.2	114	65-135
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Analyte	Concentration Spiked Measured		Accuracy(%) LCS Limits	
Category: 7060-IRP-S Arsenic, Furnace AA STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX				
Concentration Units: mg/kg				

Arsenic	72.1	78.3	109	75-125
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Analyte	Concentration Spiked Measured		Accuracy(%) LCS Limits	
Category: 7740-IRP-S Selenium, Furnace AA STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 02 SEP 94-TX QC Run: 02 SEP 94-TX				
Concentration Units: mg/kg				

Selenium	74.2	82.2	111	70-130
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ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE REPORT  
 Metals Analysis and Preparation

(cont.)

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: ICP-IRP-S ICP Metals STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 02 SEP 94-T QC Run: 02 SEP 94-T				
Concentration Units: mg/kg				
Aluminum	3650	4830	132	75-140
Antimony	75.0	68.7	92	50-150
Arsenic	72.1	76.8	107	75-125
Barium	64.8	71.8	111	75-125
Beryllium	26.7	30.3	114	75-125
Calcium	2330	2610	112	75-125
Cadmium	61.6	66.7	108	75-125
Chromium	44.1	49.3	112	75-125
Copper	78.1	84.1	108	75-125
Cobalt	177	197	111	75-125
Iron	7360	8710	118	75-125
Magnesium	2550	2860	112	75-125
Manganese	141	159	113	75-125
Molybdenum	104	114	109	75-125
Potassium	3310	3770	114	75-125
Lead	50.9	55.9	110	75-125
Nickel	110	125	113	75-125
Selenium	74.2	80.4	108	60-140
Silver	71.7	72.8	102	75-125
Sodium	346	344	99	75-125
Thallium	64.1	66.0	103	75-125
Vanadium	83.0	91.0	110	75-125
Zinc	78.2	88.6	113	75-125

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7841-IRP-S Thallium, Furnace AA STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 02 SEP 94-T QC Run: 02 SEP 94-T				
Concentration Units: mg/kg				
Thallium	64.1	63.3	99	65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Metals Analysis and Preparation

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	HG-CVAA-IRP-S	077428-0002-SD	07 SEP 94-C
MATRIX SPIKE	HG-CVAA-IRP-S	077428-0002-MS	07 SEP 94-C
MATRIX SPIKE DUPLICATE	PB-FAA-IRP-S	077428-0002-SD	02 SEP 94-TX
MATRIX SPIKE	PB-FAA-IRP-S	077428-0002-MS	02 SEP 94-TX
MATRIX SPIKE DUPLICATE	AS-FAA-IRP-S	077428-0002-SD	02 SEP 94-TX
MATRIX SPIKE	AS-FAA-IRP-S	077428-0002-MS	02 SEP 94-TX
MATRIX SPIKE DUPLICATE	SE-FAA-IRP-S	077428-0002-SD	02 SEP 94-TX
MATRIX SPIKE	SE-FAA-IRP-S	077428-0002-MS	02 SEP 94-TX
MATRIX SPIKE DUPLICATE	ICP-IRPMS-S	077428-0002-SD	02 SEP 94-T
MATRIX SPIKE	ICP-IRPMS-S	077428-0002-MS	02 SEP 94-T
MATRIX SPIKE DUPLICATE	TL-FAA-IRP-S	077428-0002-SD	02 SEP 94-T
MATRIX SPIKE	TL-FAA-IRP-S	077428-0002-MS	02 SEP 94-T

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MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Metals Analysis and Preparation

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	HG-CVAA-IRP-S	077428-0002-SD	07 SEP 94-CX
MATRIX SPIKE	HG-CVAA-IRP-S	077428-0002-MS	07 SEP 94-CX
MATRIX SPIKE DUPLICATE	PB-FAA-IRP-S	077428-0002-SD	02 SEP 94-TX
MATRIX SPIKE	PB-FAA-IRP-S	077428-0002-MS	02 SEP 94-TX
MATRIX SPIKE DUPLICATE	AS-FAA-IRP-S	077428-0002-SD	02 SEP 94-TX
MATRIX SPIKE	AS-FAA-IRP-S	077428-0002-MS	02 SEP 94-TX
MATRIX SPIKE DUPLICATE	SE-FAA-IRP-S	077428-0002-SD	02 SEP 94-TX
MATRIX SPIKE	SE-FAA-IRP-S	077428-0002-MS	02 SEP 94-TX
MATRIX SPIKE DUPLICATE	ICP-IRPMS-S	077428-0002-SD	02 SEP 94-T
MATRIX SPIKE	ICP-IRPMS-S	077428-0002-MS	02 SEP 94-T
MATRIX SPIKE DUPLICATE	TL-FAA-IRP-S	077428-0002-SD	02 SEP 94-TX
MATRIX SPIKE	TL-FAA-IRP-S	077428-0002-MS	02 SEP 94-TX

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Metals Analysis and Preparation

Analyte	Sample	Concentration		Spiked MS	MSD	%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup			MS	MSD	
Test: HG-CVAA-IRP-S Matrix SOIL Sample: 077428-0002 Units: mg/kg								
Mercury	ND	0.25	0.24	0.28	0.28	87	87	1
Test: PB-FAA-IRP-S Matrix SOIL Sample: 077428-0002 Units: mg/kg								
Lead	5.4	7.3	7.2	2.3	2.3	81	77	5
Test: AS-FAA-IRP-S Matrix SOIL Sample: 077428-0002 Units: mg/kg								
Arsenic	3.4	8.0	7.6	4.5	4.5	102	95	7
Test: SE-FAA-IRP-S Matrix SOIL Sample: 077428-0002 Units: mg/kg								
Selenium	ND	2.4	2.5	2.3	2.3	106	112	6
Test: ICP-IRPMS-S Matrix SOIL Sample: 077428-0002 Units: mg/kg								
Aluminum	8130	10600	11000	225	225	1113	1293	15
Antimony	ND	24.3	23.8	56.4	56.4	43	42	2
Barium	162	353	360	225	225	85	88	3
Beryllium	ND	5.8	5.7	5.6	5.6	103	101	2
Cadmium	ND	5.0	4.8	5.6	5.6	89	86	4
Calcium	62900	65200	65200	11300	11300	20	20	2
Chromium	7.8	29.1	28.8	22.5	22.5	94	93	1

ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Sample	Concentration		Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup	MS	MSD	MS	MSD	
Cobalt	ND	52.6	52.2	56.4	56.4	93	93	1
Copper	ND	31.1	30.4	28.2	28.2	110	108	2
Iron	7240	7570	9470	113	113	294	1980	148
Magnesium	2730	8000	8060	5640	5640	94	95	1
Manganese	104	157	158	56.4	56.4	94	95	2
Molybdenum	ND	19.9	19.8	22.5	22.5	88	88	1
Nickel	ND	57.4	56.9	56.4	56.4	102	101	1
Potassium	1690	7360	7240	5640	5640	101	98	2
Silver	ND	4.9	4.7	5.6	5.6	86	84	2
Sodium	ND	10600	10500	11300	11300	94	93	1
Vanadium	15.9	67.8	69.1	56.4	56.4	92	95	3
Zinc	20.3	70.3	76.0	56.4	56.4	89	99	11

Test: TL-FAA-IRP-S  
Matrix SOIL  
Sample: 077428-0002  
Units: mg/kg

Thallium	ND	4.0	3.9	5.0	5.0	79	78	2
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ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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I-70

## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.  
Client ID: 02760001 (2.00,6.00,)  
Lab ID: 077428-0001-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 24 AUG 94  
Prepared: See Below  
Received: 30 AUG 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.52	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	8.4	mg/kg	0.52	353.2 Modified	16 SEP 94	16 SEP 94 R

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
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GENERAL INORGANICS

Enseco  
*Creating Environmental Security*

(Soil/Solid)

Client Name: Gram, Inc.  
 Client ID: 02840001 (2.00,6.00,)  
 Lab ID: 077428-0002-SA  
 Matrix: SOIL  
 Authorized: 30 AUG 94  
 Sampled: 25 AUG 94  
 Prepared: See Below  
 Received: 30 AUG 94  
 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.56	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	68.6	mg/kg	2.8	353.2 Modified	16 SEP 94	16 SEP 94 R

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
 NA = Not applicable

Reported By: Lori Ann Upton      Approved By: Jennifer Kimzey

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## GENERAL INORGANICS

Enseco  
Corrosion Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 00810001 (2.00,6.00,)

Lab ID: 077428-0003-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 25 AUG 94

Prepared: See Below

Received: 30 AUG 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.57	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	4.0	mg/kg	0.29	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 12%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 00840001 (2.00,6.00,)

Lab ID: 077428-0004-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 25 AUG 94

Prepared: See Below

Received: 30 AUG 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.53	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	95.4	mg/kg	2.6	353.2 Modified	16 SEP 94	16 SEP 94 R

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 00840002 (2.00,6.00,)

Lab ID: 077428-0005-SA

Matrix: SOIL

Sampled: 25 AUG 94

Received: 30 AUG 94

Authorized: 30 AUG 94

Prepared: See Below

Analyzed: See Below

Parameter	Result	Dry Weight Reporting Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.53	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	87.4	mg/kg	2.7	353.2 Modified	16 SEP 94	16 SEP 94 R

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.  
Client ID: 01510001 (2.00, 6.00,)  
Lab ID: 077428-0006-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: See Below  
Received: 30 AUG 94  
Analyzed: See Below

Parameter	Result	Dry Weight Reporting Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.53	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	2.0	mg/kg	0.25	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.  
Client ID: 01570001 (2.00,6.00,)  
Lab ID: 077428-0007-SA  
Matrix: SOIL  
Authorized: 30 AUG 94  
Sampled: 26 AUG 94  
Prepared: See Below  
Received: 30 AUG 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.52	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	5.4	mg/kg	0.25	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 3%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: Q1600001 (2.00,6.00,)

Lab ID: 077428-0008-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: See Below

Received: 30 AUG 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.51	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	3.0	mg/kg	0.25	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 3%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 01610001 (2.00,6.00,)

Lab ID: 077428-0009-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: See Below

Received: 30 AUG 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.51	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	2.4	mg/kg	0.25	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 2%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 01650001 (2.00, 6.00,)

Lab ID: 077428-0010-SA

Matrix: SOIL

Authorized: 30 AUG 94

Sampled: 26 AUG 94

Prepared: See Below

Received: 30 AUG 94

Analyzed: See Below

Parameter	Result	Dry Weight Reporting Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.53	9012 Modified	07 SEP 94	07 SEP 94
Nitrate + Nitrite (as N)	8.4	mg/kg	0.25	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

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QC LOT ASSIGNMENT REPORT  
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077428-0001-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0001-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0002-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0002-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0002-MS	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0002-MS	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0002-SD	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0002-SD	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0003-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0003-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0004-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0004-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0005-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0005-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0006-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0006-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0007-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0007-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0008-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0008-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0009-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0009-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A
077428-0010-SA	SOIL	NO3&NO2-S	16 SEP 94-A	16 SEP 94-A
077428-0010-SA	SOIL	CN-IRP-S	07 SEP 94-A	07 SEP 94-A

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METHOD BLANK REPORT  
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: NO3&NO2-S Matrix: SOIL QC Lot: 16 SEP 94-A QC Run: 16 SEP 94-A			
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 07 SEP 94-A QC Run: 07 SEP 94-A			
Cyanide, Total	ND	mg/kg	0.50
Test: NO3&NO2-S Matrix: SOIL QC Lot: 16 SEP 94-A QC Run: 16 SEP 94-A			
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 07 SEP 94-A QC Run: 07 SEP 94-A			
Cyanide, Total	ND	mg/kg	0.50
Test: NO3&NO2-S Matrix: SOIL QC Lot: 16 SEP 94-A QC Run: 16 SEP 94-A			
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 07 SEP 94-A QC Run: 07 SEP 94-A			
Cyanide, Total	ND	mg/kg	0.50

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METHOD BLANK REPORT  
Wet Chemistry Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: NO3&NO2-S			
Matrix: SOIL			
QC Lot: 16 SEP 94-A QC Run: 16 SEP 94-A			
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S			
Matrix: SOIL			
QC Lot: 07 SEP 94-A QC Run: 07 SEP 94-A			
Cyanide, Total	ND	mg/kg	0.50

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LABORATORY CONTROL SAMPLE REPORT  
Wet Chemistry Analysis and Preparation

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: NO3&NO2-S Nitrate plus nitrite for soil/solid/waste matrices.				
Matrix: SOIL				
QC Lot: 16 SEP 94-A      QC Run: 16 SEP 94-A				
Concentration Units: mg/kg				

Nitrate + Nitrite (as N)	12.5	12.4	100	75-125
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Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: CN-IRP-S Cyanide				
Matrix: SOIL				
QC Lot: 07 SEP 94-A      QC Run: 07 SEP 94-A				
Concentration Units: mg/kg				

Cyanide, Total	5.00	4.95	99	77-115
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ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPECIFIC QC  
 ASSIGNMENT REPORT  
 Wet Chemistry Analysis and Preparation

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	NO3&NO2-S	077428-0002-SD	16 SEP 94-A
MATRIX SPIKE	NO3&NO2-S	077428-0002-MS	16 SEP 94-A
MATRIX SPIKE DUPLICATE	CN-9012-IRP-KAFB-S	077428-0002-SD	07 SEP 94-A
MATRIX SPIKE	CN-9012-IRP-KAFB-S	077428-0002-MS	07 SEP 94-A

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Wet Chemistry Analysis and Preparation

Analyte	Sample	Concentration			Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike	Dup	MS	MSD	MS	MSD	
Test: NO3&NO2-S									
Matrix SOIL									
Sample: 077428-0002									
Units: mg/kg									
Nitrate + Nitrite (as N)	68.6	56.6	56.3	2.5	2.5	NC	NC	NC	
Test: CN-9012-IRP-KAFB-S									
Matrix SOIL									
Sample: 077428-0002									
Units: mg, kg									
Cyanide, Total	ND	5.2	5.4	5.0	5.0	105	109	4	

ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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September 30, 1994  
QUANTERRA PROJECT NUMBER: 077507  
PO/CONTRACT: 06

Mr. Jeff Johnson  
Gram, Inc.  
8500 Manual Blvd. NE, #B-370  
Albuquerque, New Mexico 87112

Dear Mr. Johnson:

This report contains the analytical results for the nineteen soil samples which were received under chain of custody by Quanterra West Sacramento on 03 September 1994. These samples are associated with your McCormick Ranch, Kirkland AFB project.

The case narrative is an integral part of this report.

Partial preliminary results were sent via facsimile on 23 September 1994.

If you have any questions, please call me at (916) 374-4362.

Sincerely,

A handwritten signature in black ink, appearing to read "Diana", with a long, sweeping horizontal line extending to the right.

Diana L. Brooks  
Project Manager

dlb

Enseco - CAL  
2544 Industrial Blvd.  
West Sacramento, CA 95691-3435  
(916) 372-1393  
FAX: (916) 372-7768

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### QUANTERRA PROJECT NUMBER 077507

Case Narrative

Quanterra's Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

Specialty Explosives by HPLC/MS - Method 8321

**Includes Samples: 1,2,5,6,7,8,9,10,11,12**

Sample Data Sheets

Method Blank Report

Laboratory Control Sample Report (LCS)

Matrix Specific QC

Nitroaromatics and Nitramines by HPLC - Method 8330

**Includes Samples: 1,2,5,6,7,8,9,10,11,12**

Sample Data Sheets

Method Blank Report

Laboratory Control Sample Report (LCS)

Matrix Specific QC

Semivolatile Organics - Method 8270

**Includes Samples: 2,3,4,5,6,7,9,10,11,12**

Sample Data Sheets

Method Blank Report

Laboratory Control Sample Report (LCS)

Matrix Specific QC

Selected Metals - Various Methods

**Includes Samples: 1,2,5,6,7,8,9,10,11,12,13,14,15,16,17**

Sample Data Sheets

Method Blank Report

Laboratory Control Sample Report (LCS)

Matrix Specific QC

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**TABLE OF CONTENTS - cont.**

**QUANTERRA PROJECT NUMBER 077507**

General Inorganics - Various Methods

**Includes Samples: 1,2,5,6,7,8,9,10,11,12**

Sample Data Sheets

Method Blank Report

Laboratory Control Sample Report (LCS)

Matrix Specific QC

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## CASE NARRATIVE

### QUANTERRA PROJECT NUMBER 077507

#### General Comments

The temperature blanks associated with your samples were recorded as 1.8 deg C and 9.8 deg C. The ambient temperatures were 3.2 deg C and 9.4 deg C. The samples (02660001 and 02960001) associated with the temperature of 9.8 deg C were canceled per your instructions.

#### Semivolatile Organics - Method 8270

Sample 02540001 matrix spike duplicate (Quanterra ID 077507-0010SD) has a Terphenyl-d14 surrogate recovery above the control limits. A re-injection of this sample confirmed the recovery. The initial injection was reported.

The matrix spike/matrix spike duplicate had several recoveries above the control limits. The samples were re-injected and the recoveries were confirmed. The initial injection was reported.

The laboratory control sample has benzoic acid reported as NA. The actual value recovered (43%) is within the control limits. Noted in the QAPjP, this compound is flagged for a variance.

Due to electronic deliverable limitations, the library search data is available in hardcopy format only.

#### Metals - Various Methods

The ICAP matrix spike/matrix spike duplicate for iron and manganese have %RPDs above control limits and antimony, barium and manganese recoveries outside of the control limits. Re-analysis of the pair confirm the initial recoveries and %RPDs. The initial analysis was reported.

The matrix spike/matrix spike duplicate for Aluminum, Calcium and Iron have recoveries outside of the control limits due to the element having a sample concentration greater than or equal to 4 times the concentration of the matrix spike.

**CASE NARRATIVE - cont.**

**QUANTERRA PROJECT NUMBER 077507**

**Selected Metals - Various Methods cont.**

The selenium matrix spike/matrix spike duplicate have recoveries above the control limits. The re-analysis yielded a matrix spike recovery within the control limit and a matrix spike duplicate recovery above the control limit. Because the recoveries for the re-analysis were more acceptable, the re-analysis was reported.

Analysis for thallium was performed by graphite furnace in order to achieve detection levels required by the QAPjP.

**Inorganics - Various Methods**

The Nitrate plus Nitrite laboratory control sample was mis-spiked at 12.5 mg/Kg due to a misinterpretation of the QAPjP.

The matrix spike/matrix spike duplicate recoveries were not calculated due to the sample value being 4 times the concentration of the matrix spike.

There were no other anomalies associated with this report.

## QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documental quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

### Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

**Duplicate Control Samples.** A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

**Single Control Samples.** An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

**Method Blank Results.** A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.



SAMPLE DESCRIPTION INFORMATION  
for  
Gram, Inc.

Lab ID	Client ID		Matrix	Sampled Date	Time	Received Date
077507-0001-SA	03010001	(2.00,6.00,)	SOIL	29 AUG 94	08:51	03 SEP 94
077507-0002-SA	03070001	(2.00,6.00,)	SOIL	29 AUG 94	10:27	03 SEP 94
077507-0003-SA	02710001	(3.00,6.00,)	SOIL	30 AUG 94	09:39	03 SEP 94
077507-0004-SA	02730001	(3.00,6.00,)	SOIL	30 AUG 94	10:04	03 SEP 94
077507-0005-SA	02310001	(3.00,6.00,)	SOIL	30 AUG 94	12:54	03 SEP 94
077507-0006-SA	02310002	(3.00,6.00,)	SOIL	30 AUG 94	12:54	03 SEP 94
077507-0007-SA	02380001	(2.00,4.00,)	SOIL	31 AUG 94	08:45	03 SEP 94
077507-0008-SA	02880001	(3.00,6.00,)	SOIL	31 AUG 94	12:00	03 SEP 94
077507-0009-SA	02920001	(3.00,6.00,)	SOIL	31 AUG 94	13:25	03 SEP 94
077507-0010-SA	02540001	(2.50,6.00,)	SOIL	01 SEP 94	09:30	03 SEP 94
077507-0010-MS	02540001	(2.50,6.00,)	SOIL	01 SEP 94	09:30	03 SEP 94
077507-0010-SD	02540001	(2.50,6.00,)	SOIL	01 SEP 94	09:30	03 SEP 94
077507-0011-SA	02550001	(2.50,6.00,)	SOIL	01 SEP 94	10:22	03 SEP 94
077507-0012-SA	02580001	(2.50,6.00,)	SOIL	01 SEP 94	10:35	03 SEP 94
077507-0013-SA	02470001	(1.50,3.00,)	SOIL	02 SEP 94	08:25	03 SEP 94
077507-0014-SA	02460001	(2.50,6.00,)	SOIL	02 SEP 94	08:27	03 SEP 94
077507-0015-SA	02480001	(3.00,5.50,)	SOIL	02 SEP 94	08:45	03 SEP 94
077507-0016-SA	02500001	(1.50,2.50,)	SOIL	02 SEP 94	09:09	03 SEP 94
077507-0017-SA	02490001	(3.00,6.00,)	SOIL	02 SEP 94	09:10	03 SEP 94
077507-0018-SA	02660001	(2.00,6.00,)	SOIL	02 SEP 94	09:57	07 SEP 94
077507-0019-SA	02960001	(2.50,5.00,)	SOIL	02 SEP 94	11:20	07 SEP 94

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# CHAIN OF CUSTODY

NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

PROJECT NAME:	MCCORMICK RANCH	# OF CONTAINERS *	1	2	3	4	5	6	7
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS	Glass						
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282	CONTAINER VOLUME	16002						
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	4°C						
LABORATORY CONTACT:		ANALYSES REQUESTED							
SAMPLE IDENTIFICATION		DATE/TIME COLLECTED							
ITE ID, LOCATION ID, SAMPLE ID		MATRIX							
RTLD154 - 0301-0001		S	8/29/94 0851	✓		✓	✓	✓	✓
RTLD154 - 0307-0001		S	8/29/94 1027	✓		✓	✓	✓	✓
RTLD154 - 0271-0001		S	8/30/94 0959		✓				
RTLD154 - 0273-0001		S	8/30/94 1004		✓				
RTLD154 - 0231-0001		S	8/30/94 1254	✓		✓	✓	✓	✓
RTLD154 - 0231-0002		S	8/30/94 1254	✓		✓	✓	✓	✓
RTLD154 - 0238-0001		S	8/31/94 0845	✓		✓	✓	✓	✓
RTLD154 - 0288-0001		S	8/31/94 1200	✓		✓	✓	✓	✓
RTLD154 - 0292-0001		S	8/31/94 1325	✓		✓	✓	✓	✓
RTLD154 - 0254-0001		S	9/1/94 0930	✓		✓	✓	✓	✓
RTLD154 - 0254-0001		S	9/1/94 0930	✓		✓	✓	✓	✓

## LABORATORY ANALYSES:

- EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)
- NITRATE + NITRITE (E333.2)
- SEMI-VOCs (SW8270)
- ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY
- MERCURY (SW7471)
- LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7140)
- CYANIDE (SW9012)

## CONTAINER TYPES:

- P - POLYETHYLENE
- CG - CLEAR GLASS
- AG - AMBER GLASS

NOTE: FOR SOIL SAMPLES ONLY ONE 16-oz GLASS JAR OF SOIL AT C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-7)

Sample rec'd in good condition.  
10A temp = 1.82, 6A temp = 3.22, 10C 5

RELINQUISHED BY:		RECEIVED BY:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
Gram Inc	Charles Mathison	Gram Inc	Jeff Johnson

RELEASED TO SHIPPER BY:		RECEIVED BY SHIPPER:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
Gram Inc	Jeff Johnson	Gram Inc	Jeff Johnson

RELEASED TO LABORATORY BY (SHIPPER):		RECEIVED BY LABORATORY:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
Gram Inc	Jeff Johnson	Phillips Lab	Steve Gorin

DATE TIME

DATE TIME

DATE TIME

DATE TIME

DATE TIME

# CHAIN OF CUSTODY

NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

PROJECT NAME:	McCormick Ranch	# OF CONTAINERS •	1/16-02 jar per sample location					
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS	Glass					
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282	CONTAINER VOLUME	16.02 oz					
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	4°C					
LABORATORY CONTACT:		ANALYSES REQUESTED	1	2	3	4	5	6
SAMPLE IDENTIFICATION (SITE ID, LOCATION ID, SAMPLE ID)		MATRIX	DATE/TIME COLLECTED					
KRTL154-0255-00001		S	9/1/94 1022	✓	✓	✓	✓	✓
KRTL154-0258-00001		S	9/1/94 1035	✓	✓	✓	✓	✓
KRTL154-0246-00001		S	9/2/94 0827			✓	✓	✓
KRTL154-0247-00001		S	9/2/94 0825			✓	✓	✓
KRTL154-0248-00001		S	9/2/94 0845			✓	✓	✓
KRTL154-0249-00001		S	9/2/94 0910			✓	✓	✓
KRTL154-0250-00001		S	9/2/94 0909			✓	✓	✓
KRTL154-								
KRTL154-								
KRTL154-								
KRTL154-								

## LABORATORY ANALYSES:

- EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)
- NITRATE + NITRITE (E353.2)
- SEMI-VOCs (SW8270)
- ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY
- MERCURY (SW7471)
- LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740)
- CYANIDE (SW9012)

## CONTAINER TYPES:

- P - POLYETHYLENE
- CG - CLEAR GLASS
- AG - AMBER GLASS

\*NOTE: FOR SOIL SAMPLES ONLY ONE 16-oz GLASS JAR OF SOIL AT 4°C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-7)

RELINQUISHED BY:		RECEIVED BY:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
Gram, Inc.	Phonda Mathews	Gram, Inc.	Jeff Johnson
			9/2/94 1435

RELEASED TO SHIPPER BY:		RECEIVED BY SHIPPER:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
GRAM, INC.	Jeff Johnson	GRAM, INC.	Jeff Johnson
			9/2/94 1515

RELEASED TO LABORATORY BY (SHIPPER):		RECEIVED BY LABORATORY:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
		PHILLIPS	9/2/94 0930

Sample not in 900  
condition. Vial clean,  
Amb temp = 32°C. m

1-95

# CHAIN OF CUSTODY

NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

PROJECT NAME:	McCormick Ranch	# OF CONTAINERS *	1 - 16 02 g/l jar for sample	5	6	7
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS	g/l jar			
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282	CONTAINER VOLUME	1/602			
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	4°C			
LABORATORY CONTACT:		ANALYSES REQUESTED	1	2	3	4
SAMPLE IDENTIFICATION		DATE/TIME				
ITE ID, LOCATION ID, SAMPLE ID)		MATRIX	COLLECTED			
RTLD154 - 0266-0001		5	9/2/94 0957	✓	✓	✓
RTLD154 - 0296-0001		5	9/2/94 1120	✓	✓	✓
RTLD154 -						
RTLD154 -						
RTLD154 -						
RTLD154 -						
RTLD154 -						
RTLD154 -						
RTLD154 -						
RTLD154 -						
RTLD154 -						

Samples received in 900 container. Temp 16.1 = 9.5 9/17/94

## LABORATORY ANALYSES:

- EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)
- NITRATE + NITRITE (E353.2)
- SEMI-VOCs (SW8270)
- ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY
- MERCURY (SW7471)
- LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740)
- CYANIDE (SW9012)

## CONTAINER TYPES:

- P - POLYETHYLENE
- CG - CLEAR GLASS
- AG - AMBER GLASS

NOTE: FOR SOIL SAMPLES ONLY ONE 16-oz GLASS JAR OF SOIL AT IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-7)

## RELINQUISHED BY:

COMPANY NAME	SIGNATURE	DATE	TIME
GRAM, Inc	Steve Johnson	9/6/94	1354

## RELEASED TO SHIPPER BY:

COMPANY NAME	SIGNATURE	BILL OF LADING #	DATE	TIME
GRAM, Inc	Steve Johnson	91764121913	9/6/94	1352

## RELEASED TO LABORATORY BY (SHIPPER):

COMPANY NAME	SIGNATURE	DATE	TIME
GRAM, Inc	Steve Johnson	9/6/94	0800

## RECEIVED BY LABORATORY:

COMPANY NAME	SIGNATURE	DATE	TIME
GRAM, Inc	Steve Johnson	9/6/94	0800

## RECEIVED BY SHIPPER:

COMPANY NAME	SIGNATURE	BILL OF LADING #	DATE	TIME
GRAM, Inc	Steve Johnson	91764121913	9/6/94	1352

## Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 03010001 (2.00,6.00,)  
Lab ID: 077507-0001-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 29 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 03070001 (2.00,6.00,)  
Lab ID: 077507-0002-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 29 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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## Specialty Explosives by HPLC/MS

Enseco  
Coming Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02310001 (3.00,6.00,)  
Lab ID: 077507-0005-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Sciences

Method 8321

Client Name: Gram, Inc.  
Client ID: 02310002 (3.00,6.00,)  
Lab ID: 077507-0006-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
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## Specialty Explosives by HPLC/MS

Enseco  
Coring Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02380001 (2.00,4.00,)  
Lab ID: 077507-0007-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

Sampled: 31 AUG 94  
Prepared: 09 SEP 94

Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02880001 (3.00,6.00,)  
Lab ID: 077507-0008-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 31 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
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## Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02920001 (3.00,6.00,)  
Lab ID: 077507-0009-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 31 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02540001 (2.50,6.00,)  
Lab ID: 077507-0010-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02550001 (2.50,6.00,)  
Lab ID: 077507-0011-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02580001 (2.50,6.00,)  
Lab ID: 077507-0012-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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QC LOT ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077507-0001-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0002-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0005-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0006-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0007-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0008-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0009-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0010-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0010-MS	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0010-SD	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0011-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B
077507-0012-SA	SOIL	8321-IRP-S	09 SEP 94-7B	09 SEP 94-7B

METHOD BLANK REPORT  
Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8321-IRP-EXP-S			
Matrix: SOIL			
QC Lot: 09 SEP 94-7B QC Run: 09 SEP 94-7B			
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50
Test: 8321-IRP-EXP-S			
Matrix: SOIL			
QC Lot: 09 SEP 94-7B QC Run: 09 SEP 94-7B			
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50
Test: 8321-IRP-EXP-S			
Matrix: SOIL			
QC Lot: 09 SEP 94-7B QC Run: 09 SEP 94-7B			
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50



LABORATORY CONTROL SAMPLE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 8321-IRP-S Explosives by HPLC/MS				
Matrix: SOIL				
QC Lot: 09 SEP 94-7B      QC Run: 09 SEP 94-7B				
Concentration Units: mg/kg				
Nitroglycerin	5.00	4.15	83	65-135
PETN	2.50	2.29	92	65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	8321-IRP-EXP-S	077507-0010-SD	09 SEP 94-7B
MATRIX SPIKE	8321-IRP-EXP-S	077507-0010-MS	09 SEP 94-7B

MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Sample	Concentration			Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike	Matrix Dup	MS	MSD	MS	MSD	
Test: 8321-IRP-EXP-S									
Matrix SOIL									
Sample: 077507-0010									
Units: mg/kg									
Nitroglycerin	ND	5.1	4.5		5.0	5.0	102	91	12
PETN	ND	2.6	2.6		2.5	2.5	103	103	0

ND = Not detected.

NC = Not calculated, calculation not applicable.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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I-112

# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

Method 8330

Client Name: Gram, Inc.  
Client ID: 03010001 (2.00,6.00,)  
Lab ID: 077507-0001-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 29 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 13 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

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# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

## Method 8330

Client Name: Gram, Inc.  
Client ID: 03070001 (2.00,6.00,)  
Lab ID: 077507-0002-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 29 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 13 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

J-1141

# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

Method 8330

Client Name: Gram, Inc.  
Client ID: 02310001 (3.00,6.00,)  
Lab ID: 077507-0005-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 13 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-115

# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

## Method 8330

Client Name: Gram, Inc.  
Client ID: 02310002 (3.00,6.00,)  
Lab ID: 077507-0006-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 13 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-116



# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

## Method 8330

Client Name: Gram, Inc.  
Client ID: 02380001 (2.00, 4.00,)  
Lab ID: 077507-0007-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 31 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-117

# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

## Method 8330

Client Name: Gram, Inc.  
Client ID: 02880001 (3.00,6.00,)  
Lab ID: 077507-0008-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 31 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-118

# Nitroaromatics and Nitramines by HPLC

Enseco  
Coring Environmental Service

## Method 8330

Client Name: Gram, Inc.

Client ID: 02920001 (3.00,6.00,)

Lab ID: 077507-0009-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 31 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I-119

# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

## Method 8330

Client Name: Gram, Inc.  
Client ID: 02540001 (2.50,6.00,)  
Lab ID: 077507-0010-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 13 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I-120

## Nitroaromatics and Nitramines by HPLC

Enseco  
Coring Environmental Services

## Method 8330

Client Name: Gram, Inc.  
Client ID: 02550001 (2.50,6.00,)  
Lab ID: 077507-0011-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

Sampled: 01 SEP 94  
Prepared: 09 SEP 94

Received: 03 SEP 94  
Analyzed: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

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# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

Method 8330

Client Name: Gram, Inc.  
Client ID: 02580001 (2.50,6.00,)  
Lab ID: 077507-0012-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-122

QC LOT ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077507-0001-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0002-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0005-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0006-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0007-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0008-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0009-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0010-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0010-MS	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0010-SD	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0011-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A
077507-0012-SA	SOIL	8330-IRP-S	09 SEP 94-7A	09 SEP 94-7A

METHOD BLANK REPORT  
Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8330-IRP-KAFB-1C-S			
Matrix: SOIL			
QC Lot: 09 SEP 94-7A QC Run: 09 SEP 94-7A			
HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

Test: 8330-IRP-KAFB-1C-S  
Matrix: SOIL  
QC Lot: 09 SEP 94-7A QC Run: 09 SEP 94-7A

HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

Test: 8330-IRP-KAFB-1C-S  
Matrix: SOIL  
QC Lot: 09 SEP 94-7A QC Run: 09 SEP 94-7A

HMX	ND	mg/kg	0.25
sym-Trinitrobenzene	ND	mg/kg	0.25
RDX	ND	mg/kg	0.25
1,3-Dinitrobenzene	ND	mg/kg	0.25
Nitrobenzene	ND	mg/kg	0.25

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METHOD BLANK REPORT  
Special Services - LC Mass Spectrometry (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8330-IRP-KAFB-1C-S			
Matrix: SOIL			
QC Lot: 09 SEP 94-7A QC Run: 09 SEP 94-7A			
2,4,6-Trinitrotoluene	ND	mg/kg	0.25
Tetryl	ND	mg/kg	0.25
2,4-Dinitrotoluene	ND	mg/kg	0.25
2,6-Dinitrotoluene	ND	mg/kg	0.25
2-Nitrotoluene	ND	mg/kg	0.25
3-Nitrotoluene	ND	mg/kg	0.25
4-Nitrotoluene	ND	mg/kg	0.25

I-25

LABORATORY CONTROL SAMPLE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 8330-IRP-S Explosives by HPLC				
Matrix: SOIL				
QC Lot: 09 SEP 94-7A      QC Run: 09 SEP 94-7A				
Concentration Units: mg/kg				
HMX	1.00	0.931	93	75-107
sym-Trinitrobenzene	1.00	0.927	93	65-135
RDX	1.00	0.916	92	70-99
1,3-Dinitrobenzene	1.00	0.888	89	74-99
Nitrobenzene	1.00	0.856	86	71-95
2,4,6-Trinitrotoluene	1.00	0.817	82	75-107
Tetryl	1.00	0.727	73	65-135
2,4-Dinitrotoluene	1.00	0.964	96	72-106
2,6-Dinitrotoluene	1.00	0.964	96	66-102
2-Am-DNT	1.00	0.957	96	77-101
4-Am-DNT	1.00	0.961	96	77-108
2-Nitrotoluene	1.00	0.948	95	72-97
4-Nitrotoluene	1.00	0.979	98	67-110
3-Nitrotoluene	1.00	0.970	97	75-104

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

I-126

MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	8330-IRP-KAFB-1C-S	077507-0010-SD	09 SEP 94-7A
MATRIX SPIKE	8330-IRP-KAFB-1C-S	077507-0010-MS	09 SEP 94-7A

I-67

MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Sample	Concentration			Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup	MS	MSD	MS	MSD		
Test: 8330-IRP-KAFB-1C-S									
Matrix SOIL									
Sample: 077507-0010									
Units: mg/kg									
HMX	ND	0.96	0.89	1.0	1.0	96	89	8	
sym-Trinitrobenzene	ND	0.94	0.91	1.0	1.0	95	91	4	
RDX	ND	0.91	0.83	1.0	1.0	91	83	9	
1,3-Dinitrobenzene	ND	0.92	0.84	1.0	1.0	92	84	9	
Nitrobenzene	ND	0.92	0.81	1.0	1.0	92	81	13	
2,4,6-Trinitrotoluene	ND	0.84	0.88	1.0	1.0	84	88	5	
Tetryl	ND	0.79	1.2	1.0	1.0	79	124	44	
2,4-Dinitrotoluene	ND	0.97	0.89	1.0	1.0	97	89	9	
2,6-Dinitrotoluene	ND	0.97	0.90	1.0	1.0	97	90	8	
2-Nitrotoluene	ND	0.97	0.87	1.0	1.0	97	87	11	
3-Nitrotoluene	ND	0.98	0.87	1.0	1.0	98	87	11	
4-Nitrotoluene	ND	0.99	0.89	1.0	1.0	99	89	10	

ND = Not detected.

NC = Not calculated, calculation not applicable.

All calculations are performed before rounding to avoid round-off errors in calculated results.

## Semivolatile Organics

## Method 8270

Client Name: Gram, Inc.  
 Client ID: 03070001 (2.00,6.00,)  
 Lab ID: 077507-0002-SA  
 Matrix: SOIL  
 Authorized: 03 SEP 94

Sampled: 29 AUG 94  
 Prepared: 09 SEP 94

Received: 03 SEP 94  
 Analyzed: 21 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	0.75
Acenaphthylene	ND	mg/kg	0.75
Anthracene	ND	mg/kg	0.75
Benzo(a)anthracene	ND	mg/kg	0.75
Benzo(a)pyrene	ND	mg/kg	0.75
Benzo(b)fluoranthene	ND	mg/kg	0.75
Benzo(g,h,i)perylene	ND	mg/kg	0.75
Benzo(k)fluoranthene	ND	mg/kg	0.75
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.4
4-Bromophenyl phenyl ether	ND	mg/kg	0.75
Butyl benzyl phthalate	ND	mg/kg	0.75
4-Chloroaniline	ND	mg/kg	1.4
2,2'-Oxybis(1-chloropropane) bis(2-Chloroethoxy)- methane	ND	mg/kg	0.75
bis(2-Chloroethyl) ether	ND	mg/kg	0.75
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.75
2-Chlorophenol	ND	mg/kg	0.35
4-Chlorophenyl phenyl ether	ND	mg/kg	0.75
Chrysene	ND	mg/kg	0.75
Di-n-butyl phthalate	ND	mg/kg	0.75
Dibenz(a,h)anthracene	ND	mg/kg	0.75
Dibenzofuran	ND	mg/kg	0.75
1,2-Dichlorobenzene	ND	mg/kg	0.75
1,3-Dichlorobenzene	ND	mg/kg	0.75
1,4-Dichlorobenzene	ND	mg/kg	0.75
3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.35
Diethyl phthalate	ND	mg/kg	0.75
2,4-Dimethylphenol	ND	mg/kg	0.35
Dimethyl phthalate	ND	mg/kg	0.75
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.5
2,4-Dinitrophenol	ND	mg/kg	3.5
2,4-Dinitrotoluene	ND	mg/kg	0.75
2,6-Dinitrotoluene	ND	mg/kg	0.75
Di-n-octyl phthalate	ND	mg/kg	0.75

(continued on following page)

ND = Not detected  
 NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

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Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 03070001 (2.00,6.00,)  
Lab ID: 077507-0002-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 29 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 21 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	mg/kg	0.75
Fluoranthene	ND	mg/kg	0.75
Fluorene	ND	mg/kg	0.75
Hexachlorobenzene	ND	mg/kg	0.75
Hexachlorobutadiene	ND	mg/kg	0.75
Hexachlorocyclopentadiene	ND	mg/kg	0.75
Hexachloroethane	ND	mg/kg	0.75
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.75
Isophorone	ND	mg/kg	0.75
2-Methylnaphthalene	ND	mg/kg	0.75
2-Methylphenol	ND	mg/kg	0.35
4-Methylphenol	ND	mg/kg	0.35
Naphthalene	ND	mg/kg	0.75
2-Nitroaniline	ND	mg/kg	3.5
3-Nitroaniline	ND	mg/kg	3.5
4-Nitroaniline	ND	mg/kg	3.5
Nitrobenzene	ND	mg/kg	0.75
2-Nitrophenol	ND	mg/kg	0.35
4-Nitrophenol	ND	mg/kg	1.7
N-Nitrosodiphenylamine	ND	mg/kg	0.75
N-Nitroso-di-n-propylamine	ND	mg/kg	0.75
Pentachlorophenol	ND	mg/kg	3.5
Phenanthrene	ND	mg/kg	0.75
Phenol	ND	mg/kg	0.35
Pyrene	ND	mg/kg	0.75
1,2,4-Trichlorobenzene	ND	mg/kg	0.75
2,4,5-Trichlorophenol	ND	mg/kg	3.5
2,4,6-Trichlorophenol	ND	mg/kg	0.35

Surrogate	Recovery	
Nitrobenzene-d5	98	%
2-Fluorobiphenyl	104	%
Terphenyl-d14	125	%
Phenol-d5	84	%
2-Fluorophenol	50	%
2,4,6-Tribromophenol	33	%

Percent Moisture is 7%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-130

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 03070001 (2.00,6.00,)

Lab ID: 077507-0002-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 29 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	610	ug/Kg	b
Unknown Ketone	1500	ug/Kg	b
Unknown Oxygenated Compound	930	ug/Kg	b
Unknown Oxygenated Compound	440	ug/Kg	
Unknown Halogenated	590	ug/kg	
1,3-Cyclopentanedione, 2-Bromo-	190	ug/kg	or isomer
Unknown	170	ug/Kg	b
Unknown	330	ug/Kg	

b : Compound found in the method blank

I-131

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.

Client ID: 02710001 (3.00,6.00,)

Lab ID: 077507-0003-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 30 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	0.74
Acenaphthylene	ND	mg/kg	0.74
Anthracene	ND	mg/kg	0.74
Benzo(a)anthracene	ND	mg/kg	0.74
Benzo(a)pyrene	ND	mg/kg	0.74
Benzo(b)fluoranthene	ND	mg/kg	0.74
Benzo(g,h,i)perylene	ND	mg/kg	0.74
Benzo(k)fluoranthene	ND	mg/kg	0.74
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.4
4-Bromophenyl phenyl ether	ND	mg/kg	0.74
Butyl benzyl phthalate	ND	mg/kg	0.74
4-Chloroaniline	ND	mg/kg	1.4
2,2'-Oxybis(1-chloropropane) bis(2-Chloroethoxy)- methane	ND	mg/kg	0.74
bis(2-Chloroethyl) ether	ND	mg/kg	0.74
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.74
2-Chlorophenol	ND	mg/kg	0.35
4-Chlorophenyl phenyl ether	ND	mg/kg	0.74
Chrysene	ND	mg/kg	0.74
Di-n-butyl phthalate	ND	mg/kg	0.74
Dibenz(a,h)anthracene	ND	mg/kg	0.74
Dibenzofuran	ND	mg/kg	0.74
1,2-Dichlorobenzene	ND	mg/kg	0.74
1,3-Dichlorobenzene	ND	mg/kg	0.74
1,4-Dichlorobenzene	ND	mg/kg	0.74
3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.35
Diethyl phthalate	ND	mg/kg	0.74
2,4-Dimethylphenol	ND	mg/kg	0.35
Dimethyl phthalate	ND	mg/kg	0.74
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.5
2,4-Dinitrophenol	ND	mg/kg	3.5
2,4-Dinitrotoluene	ND	mg/kg	0.74
2,6-Dinitrotoluene	ND	mg/kg	0.74
Di-n-octyl phthalate	ND	mg/kg	0.74

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-132



Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02710001 (3.00,6.00,)  
Lab ID: 077507-0003-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	mg/kg	0.74
Fluoranthene	ND	mg/kg	0.74
Fluorene	ND	mg/kg	0.74
Hexachlorobenzene	ND	mg/kg	0.74
Hexachlorobutadiene	ND	mg/kg	0.74
Hexachlorocyclopentadiene	ND	mg/kg	0.74
Hexachloroethane	ND	mg/kg	0.74
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.74
Isophorone	ND	mg/kg	0.74
2-Methylnaphthalene	ND	mg/kg	0.74
2-Methylphenol	ND	mg/kg	0.35
4-Methylphenol	ND	mg/kg	0.35
Naphthalene	ND	mg/kg	0.74
2-Nitroaniline	ND	mg/kg	3.5
3-Nitroaniline	ND	mg/kg	3.5
4-Nitroaniline	ND	mg/kg	3.5
Nitrobenzene	ND	mg/kg	0.74
2-Nitrophenol	ND	mg/kg	0.35
4-Nitrophenol	ND	mg/kg	1.7
N-Nitrosodiphenylamine	ND	mg/kg	0.74
N-Nitroso-di-n-propylamine	ND	mg/kg	0.74
Pentachlorophenol	ND	mg/kg	3.5
Phenanthrene	ND	mg/kg	0.74
Phenol	ND	mg/kg	0.35
Pyrene	ND	mg/kg	0.74
1,2,4-Trichlorobenzene	ND	mg/kg	0.74
2,4,5-Trichlorophenol	ND	mg/kg	3.5
2,4,6-Trichlorophenol	ND	mg/kg	0.35

Surrogate	Recovery
Nitrobenzene-d5	80 %
2-Fluorobiphenyl	88 %
Terphenyl-d14	126 %
Phenol-d5	75 %
2-Fluorophenol	49 %
2,4,6-Tribromophenol	46 %

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

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Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02710001 (2.00,6.00,)

Lab ID: 077507-003-SA

Matrix: SOIL

Sampled: 30 AUG 94

Received: 03 SEP 94

Authorized: 03 SEP 94

Prepared: 09 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	510	ug/Kg	b
Unknown Ketone	740	ug/Kg	b
Unknown Oxygenated Compound	280	ug/Kg	b
Unknown Halogenated	410	ug/Kg	
Propanoic Acid, 2-Methyl-, 1-(1-Dimethylethyl)-2-methyl-	210	ug/Kg	or isomer b
Unknown	220	ug/Kg	b
Unknown alkane	400	ug/Kg	
Ergost-5-EN-3-OL, (3.BETA.)-	150	ug/Kg	or isomer
Unknown	270	ug/Kg	

b : Compound found in the method blank

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Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02730001  
Lab ID: 077507-0004-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(3.00,6.00,)

Sampled: 30 AUG 94  
Prepared: 09 SEP 94

Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	0.73
Acenaphthylene	ND	mg/kg	0.73
Anthracene	ND	mg/kg	0.73
Benzo(a)anthracene	ND	mg/kg	0.73
Benzo(a)pyrene	ND	mg/kg	0.73
Benzo(b)fluoranthene	ND	mg/kg	0.73
Benzo(g,h,i)perylene	ND	mg/kg	0.73
Benzo(k)fluoranthene	ND	mg/kg	0.73
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.3
4-Bromophenyl phenyl ether	ND	mg/kg	0.73
Butyl benzyl phthalate	ND	mg/kg	0.73
4-Chloroaniline	ND	mg/kg	1.3
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.73
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.73
bis(2-Chloroethyl) ether	ND	mg/kg	0.73
4-Chloro-3-methylphenol	ND	mg/kg	1.3
2-Chloronaphthalene	ND	mg/kg	0.73
2-Chlorophenol	ND	mg/kg	0.34
4-Chlorophenyl phenyl ether	ND	mg/kg	0.73
Chrysene	ND	mg/kg	0.73
Di-n-butyl phthalate	ND	mg/kg	0.73
Dibenz(a,h)anthracene	ND	mg/kg	0.73
Dibenzofuran	ND	mg/kg	0.73
1,2-Dichlorobenzene	ND	mg/kg	0.73
1,3-Dichlorobenzene	ND	mg/kg	0.73
1,4-Dichlorobenzene	ND	mg/kg	0.73
3,3'-Dichlorobenzidine	ND	mg/kg	1.3
2,4-Dichlorophenol	ND	mg/kg	0.34
Diethyl phthalate	ND	mg/kg	0.73
2,4-Dimethylphenol	ND	mg/kg	0.34
Dimethyl phthalate	ND	mg/kg	0.73
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.4
2,4-Dinitrophenol	ND	mg/kg	3.4
2,4-Dinitrotoluene	ND	mg/kg	0.73
2,6-Dinitrotoluene	ND	mg/kg	0.73
Di-n-octyl phthalate	ND	mg/kg	0.73

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-135

## Semivolatile Organics

Enseco  
Corning Environmental Services

## Method 8270

Client Name: Gram, Inc.  
Client ID: 02730001  
Lab ID: 077507-0004-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(3.00,6.00,)

Sampled: 30 AUG 94  
Prepared: 09 SEP 94

Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.73
Fluoranthene	ND	mg/kg	0.73
Fluorene	ND	mg/kg	0.73
Hexachlorobenzene	ND	mg/kg	0.73
Hexachlorobutadiene	ND	mg/kg	0.73
Hexachlorocyclopentadiene	ND	mg/kg	0.73
Hexachloroethane	ND	mg/kg	0.73
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.73
Isophorone	ND	mg/kg	0.73
2-Methylnaphthalene	ND	mg/kg	0.73
2-Methylphenol	ND	mg/kg	0.34
4-Methylphenol	ND	mg/kg	0.34
Naphthalene	ND	mg/kg	0.73
2-Nitroaniline	ND	mg/kg	3.4
3-Nitroaniline	ND	mg/kg	3.4
4-Nitroaniline	ND	mg/kg	3.4
Nitrobenzene	ND	mg/kg	0.73
2-Nitrophenol	ND	mg/kg	0.34
4-Nitrophenol	ND	mg/kg	1.7
N-Nitrosodiphenylamine	ND	mg/kg	0.73
N-Nitroso-di- n-propylamine	ND	mg/kg	0.73
Pentachlorophenol	ND	mg/kg	3.4
Phenanthrene	ND	mg/kg	0.73
Phenol	ND	mg/kg	0.34
Pyrene	ND	mg/kg	0.73
1,2,4-Trichlorobenzene	ND	mg/kg	0.73
2,4,5-Trichlorophenol	ND	mg/kg	3.4
2,4,6-Trichlorophenol	ND	mg/kg	0.34

Surrogate	Recovery
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Nitrobenzene-d5	80	%
2-Fluorobiphenyl	78	%
Terphenyl-d14	124	%
Phenol-d5	72	%
2-Fluorophenol	58	%
2,4,6-Tribromophenol	40	%

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-136

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02730001 (3.00,6.00,)

Lab ID: 077507-004-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 30 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	19000	ug/Kg	b
Unknown Oxygenated Compound	440	ug/Kg	
Octane, 4-Methyl-	260	ug/kg	b
Octane, 3-methyl-	190	ug/kg	b
Unknown Oxygenated Compound	630	ug/Kg	b
Unknown Ketone	900	ug/Kg	b
Unknown Oxygenated Compound	480	ug/Kg	
Unknown Halogenated	270	ug/Kg	
Propanoic Acid, 2-Methyl-, 1-(1-Dimethylethyl)-2-methyl-	170	ug/Kg	or isomer b
Pentacosane	630	ug/Kg	b
Unknown Alkane	270	ug/Kg	

b : Compound found in the method blank

I-137

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02310001 (3.00,6.00,)  
Lab ID: 077507-0005-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

Sampled: 30 AUG 94  
Prepared: 09 SEP 94

Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	1.5
Acenaphthylene	ND	mg/kg	1.5
Anthracene	ND	mg/kg	1.5
Benzo(a)anthracene	ND	mg/kg	1.5
Benzo(a)pyrene	ND	mg/kg	1.5
Benzo(b)fluoranthene	ND	mg/kg	1.5
Benzo(g,h,i)perylene	ND	mg/kg	1.5
Benzo(k)fluoranthene	ND	mg/kg	1.5
Benzoic acid	ND	mg/kg	3.3
Benzyl alcohol	ND	mg/kg	2.7
4-Bromophenyl			
phenyl ether	ND	mg/kg	1.5
Butyl benzyl phthalate	ND	mg/kg	1.5
4-Chloroaniline	ND	mg/kg	2.7
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	1.5
bis(2-Chloroethoxy)-			
methane	ND	mg/kg	1.5
bis(2-Chloroethyl) ether	ND	mg/kg	1.5
4-Chloro-3-methylphenol	ND	mg/kg	2.7
2-Chloronaphthalene	ND	mg/kg	1.5
2-Chlorophenol	ND	mg/kg	0.69
4-Chlorophenyl			
phenyl ether	ND	mg/kg	1.5
Chrysene	ND	mg/kg	1.5
Di-n-butyl phthalate	ND	mg/kg	1.5
Dibenz(a,h)anthracene	ND	mg/kg	1.5
Dibenzofuran	ND	mg/kg	1.5
1,2-Dichlorobenzene	ND	mg/kg	1.5
1,3-Dichlorobenzene	ND	mg/kg	1.5
1,4-Dichlorobenzene	ND	mg/kg	1.5
3,3'-Dichlorobenzidine	ND	mg/kg	2.7
2,4-Dichlorophenol	ND	mg/kg	0.69
Diethyl phthalate	ND	mg/kg	1.5
2,4-Dimethylphenol	ND	mg/kg	0.69
Dimethyl phthalate	ND	mg/kg	1.5
4,6-Dinitro-			
2-methylphenol	ND	mg/kg	6.9
2,4-Dinitrophenol	ND	mg/kg	6.9
2,4-Dinitrotoluene	ND	mg/kg	1.5
2,6-Dinitrotoluene	ND	mg/kg	1.5
Di-n-octyl phthalate	ND	mg/kg	1.5

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-138

## Semivolatile Organics

## Method 8270

Client Name: Gram, Inc.

Client ID: 02310001 (3.00,6.00,)

Lab ID: 077507-0005-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 30 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	mg/kg	1.5
Fluoranthene	ND	mg/kg	1.5
Fluorene	ND	mg/kg	1.5
Hexachlorobenzene	ND	mg/kg	1.5
Hexachlorobutadiene	ND	mg/kg	1.5
Hexachlorocyclopentadiene	ND	mg/kg	1.5
Hexachloroethane	ND	mg/kg	1.5
Indeno(1,2,3-cd)pyrene	ND	mg/kg	1.5
Isophorone	ND	mg/kg	1.5
2-Methylnaphthalene	ND	mg/kg	1.5
2-Methylphenol	ND	mg/kg	0.69
4-Methylphenol	ND	mg/kg	0.69
Naphthalene	ND	mg/kg	1.5
2-Nitroaniline	ND	mg/kg	6.9
3-Nitroaniline	ND	mg/kg	6.9
4-Nitroaniline	ND	mg/kg	6.9
Nitrobenzene	ND	mg/kg	1.5
2-Nitrophenol	ND	mg/kg	0.69
4-Nitrophenol	ND	mg/kg	3.3
N-Nitrosodiphenylamine	ND	mg/kg	1.5
N-Nitroso-di-n-propylamine	ND	mg/kg	1.5
Pentachlorophenol	ND	mg/kg	6.9
Phenanthrene	ND	mg/kg	1.5
Phenol	ND	mg/kg	0.69
Pyrene	ND	mg/kg	1.5
1,2,4-Trichlorobenzene	ND	mg/kg	1.5
2,4,5-Trichlorophenol	ND	mg/kg	6.9
2,4,6-Trichlorophenol	ND	mg/kg	0.69

Surrogate	Recovery	
Nitrobenzene-d5	90	%
2-Fluorobiphenyl	92	%
Terphenyl-d14	111	%
Phenol-d5	90	%
2-Fluorophenol	88	%
2,4,6-Tribromophenol	75	%

(continued on following page)

 ND = Not detected  
 NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

 The cover letter is an integral part of this report.  
 Rev 230787

I-139

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Semivolatile Organics

Enseco  
Corning Environmental Service

Method 8270

Client Name: Gram, Inc.

Client ID: 02310001 (3.00,6.00,)

Lab ID: 077507-0005-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 30 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

Note j : All Reporting Limits for this sample raised due to  
matrix interferences.

ND = Not detected

NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-140



Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02310001 (3.00,6.00,)

Lab ID: 077507-005-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 30 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	14000	ug/Kg	b
Unknown Ketone	2400	ug/Kg	b
Unknown Oxygenated Compound	1800	ug/Kg	b
Tetradecane	1600	ug/Kg	
Unknown Alkane	1400	ug/Kg	
Pentadecane	2400	ug/Kg	
Unknown	930	ug/Kg	
Hexadecane	3100	ug/Kg	
Unknown Alkane	2400	ug/Kg	
Heptadecane	3200	ug/Kg	
Unknown Alkane	3900	ug/Kg	
Unknown Alkane	1100	ug/Kg	
Octadecane	4600	ug/kg	
Unknown Alkane	4300	ug/kg	
Unknown alkane	3800	ug/kg	
Eicosane	3800	ug/kg	
Phenanthrene, 3,6-Dimethyl-	890	ug/Kg	or isomer
Phenanthrene, 2,5-Dimethyl-	1200	ug/kg	or isomer
Unknown	1200	ug/kg	
Unknown Alkane	3000	ug/kg	
Unknown	990	ug/kg	
Docosane	4400	ug/Kg	
Unknown Alkane	1900	ug/kg	
Tetracosane	1300	ug/Kg	
Pentacosane	1200	ug/kg	

b : Compound found in the method blank

I-141

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02310002 (3.00,6.00,)  
Lab ID: 077507-0006-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	1.5
Acenaphthylene	ND	mg/kg	1.5
Anthracene	ND	mg/kg	1.5
Benzo(a)anthracene	ND	mg/kg	1.5
Benzo(a)pyrene	ND	mg/kg	1.5
Benzo(b)fluoranthene	ND	mg/kg	1.5
Benzo(g,h,i)perylene	ND	mg/kg	1.5
Benzo(k)fluoranthene	ND	mg/kg	1.5
Benzoic acid	ND	mg/kg	3.4
Benzyl alcohol	ND	mg/kg	2.7
4-Bromophenyl phenyl ether	ND	mg/kg	1.5
Butyl benzyl phthalate	ND	mg/kg	1.5
4-Chloroaniline	ND	mg/kg	2.7
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	1.5
bis(2-Chloroethoxy)- methane	ND	mg/kg	1.5
bis(2-Chloroethyl) ether	ND	mg/kg	1.5
4-Chloro-3-methylphenol	ND	mg/kg	2.7
2-Chloronaphthalene	ND	mg/kg	1.5
2-Chlorophenol	ND	mg/kg	0.69
4-Chlorophenyl phenyl ether	ND	mg/kg	1.5
Chrysene	ND	mg/kg	1.5
Di-n-butyl phthalate	ND	mg/kg	1.5
Dibenz(a,h)anthracene	ND	mg/kg	1.5
Dibenzofuran	ND	mg/kg	1.5
1,2-Dichlorobenzene	ND	mg/kg	1.5
1,3-Dichlorobenzene	ND	mg/kg	1.5
1,4-Dichlorobenzene	ND	mg/kg	1.5
3,3'-Dichlorobenzidine	ND	mg/kg	2.7
2,4-Dichlorophenol	ND	mg/kg	0.69
Diethyl phthalate	ND	mg/kg	1.5
2,4-Dimethylphenol	ND	mg/kg	0.69
Dimethyl phthalate	ND	mg/kg	1.5
4,6-Dinitro- 2-methylphenol	ND	mg/kg	6.9
2,4-Dinitrophenol	ND	mg/kg	6.9
2,4-Dinitrotoluene	ND	mg/kg	1.5
2,6-Dinitrotoluene	ND	mg/kg	1.5
Di-n-octyl phthalate	ND	mg/kg	1.5

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-142

## Semivolatile Organics

## Method 8270

 Client Name: Gram, Inc.  
 Client ID: 02310002  
 Lab ID: 077507-0006-SA  
 Matrix: SOIL  
 Authorized: 03 SEP 94

(3.00,6.00,)

 Sampled: 30 AUG 94  
 Prepared: 09 SEP 94

 Received: 03 SEP 94  
 Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units Limit
bis(2-Ethylhexyl)- phthalate	ND	mg/kg 1.5
Fluoranthene	ND	mg/kg 1.5
Fluorene	ND	mg/kg 1.5
Hexachlorobenzene	ND	mg/kg 1.5
Hexachlorobutadiene	ND	mg/kg 1.5
Hexachlorocyclopentadiene	ND	mg/kg 1.5
Hexachloroethane	ND	mg/kg 1.5
Indeno(1,2,3-cd)pyrene	ND	mg/kg 1.5
Isophorone	ND	mg/kg 1.5
2-Methylnaphthalene	ND	mg/kg 0.69
2-Methylphenol	ND	mg/kg 0.69
4-Methylphenol	ND	mg/kg 1.5
Naphthalene	ND	mg/kg 6.9
2-Nitroaniline	ND	mg/kg 6.9
3-Nitroaniline	ND	mg/kg 6.9
4-Nitroaniline	ND	mg/kg 1.5
Nitrobenzene	ND	mg/kg 0.69
2-Nitrophenol	ND	mg/kg 3.4
4-Nitrophenol	ND	mg/kg 1.5
N-Nitrosodiphenylamine	ND	mg/kg 1.5
N-Nitroso-di- n-propylamine	ND	mg/kg 1.5
Pentachlorophenol	ND	mg/kg 6.9
Phenanthrene	ND	mg/kg 1.5
Phenol	ND	mg/kg 0.69
Pyrene	ND	mg/kg 1.5
1,2,4-Trichlorobenzene	ND	mg/kg 1.5
2,4,5-Trichlorophenol	ND	mg/kg 6.9
2,4,6-Trichlorophenol	ND	mg/kg 0.69

j

Surrogate	Recovery
Nitrobenzene-d5	106 %
2-Fluorobiphenyl	107 %
Terphenyl-d14	115 %
Phenol-d5	100 %
2-Fluorophenol	101 %
2,4,6-Tribromophenol	84 %

(continued on following page)

 ND = Not detected  
 NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

 The cover letter is an integral part of this report.  
 Rev 230787

I-143

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02310002 (3.00,6.00,)  
Lab ID: 077507-0006-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note j : All Reporting Limits for this sample raised due to  
matrix interferences.

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-1441

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02310002 (3.00,6.00,)

Lab ID: 077507-006-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 30 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	9000	ug/Kg	b
Unknown Ketone	1800	ug/Kg	b
Unknown Oxygenated Compound	1400	ug/Kg	
Unknown Alkane	930	ug/Kg	
Pentadecane	1400	ug/Kg	
Hexadecane	2300	ug/kg	
Unknown Alkane	2400	ug/Kg	
Heptadecane	3100	ug/Kg	
Unknown Alkane	1400	ug/Kg	
Octadecane	4000	ug/Kg	
Unknown Alkane	4100	ug/Kg	
Unknown Alkane	920	ug/kg	
Unknown Alkane	3500	ug/Kg	
Eicosane	3400	ug/Kg	
Cyclooctane, 1,2,5,6-Tetrabromo-	2000	ug/kg	or isomer
Phenanthrene, 2,7-Dimethyl-	2200	ug/kg	or isomer
Phenanthrene, 2,5-Dimethyl-	910	ug/kg	or isomer
Unknown	1300	ug/Kg	
Unknown Alkane	2600	ug/kg	
Unknown	910	ug/Kg	
Unknown Alkane	4000	ug/Kg	
Unknown Alkane	1500	ug/Kg	
Tetracosane	1100	ug/Kg	
Unknown	1100	ug/Kg	
Pentacosane	990	ug/Kg	

b : Compound found in the method blank

I-1415

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02380001 (2.00,4.00,)  
Lab ID: 077507-0007-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 31 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	0.73
Acenaphthylene	ND	mg/kg	0.73
Anthracene	ND	mg/kg	0.73
Benzo(a)anthracene	ND	mg/kg	0.73
Benzo(a)pyrene	ND	mg/kg	0.73
Benzo(b)fluoranthene	ND	mg/kg	0.73
Benzo(g,h,i)perylene	ND	mg/kg	0.73
Benzo(k)fluoranthene	ND	mg/kg	0.73
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.4
4-Bromophenyl phenyl ether	ND	mg/kg	0.73
Butyl benzyl phthalate	ND	mg/kg	0.73
4-Chloroaniline	ND	mg/kg	1.4
2,2'-Oxybis(1-chloropropane) bis(2-Chloroethoxy)- methane	ND	mg/kg	0.73
bis(2-Chloroethyl) ether	ND	mg/kg	0.73
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.73
2-Chlorophenol	ND	mg/kg	0.35
4-Chlorophenyl phenyl ether	ND	mg/kg	0.73
Chrysene	ND	mg/kg	0.73
Di-n-butyl phthalate	ND	mg/kg	0.73
Dibenz(a,h)anthracene	ND	mg/kg	0.73
Dibenzofuran	ND	mg/kg	0.73
1,2-Dichlorobenzene	ND	mg/kg	0.73
1,3-Dichlorobenzene	ND	mg/kg	0.73
1,4-Dichlorobenzene	ND	mg/kg	0.73
3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.35
Diethyl phthalate	ND	mg/kg	0.73
2,4-Dimethylphenol	ND	mg/kg	0.35
Dimethyl phthalate	ND	mg/kg	0.73
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.5
2,4-Dinitrophenol	ND	mg/kg	3.5
2,4-Dinitrotoluene	ND	mg/kg	0.73
2,6-Dinitrotoluene	ND	mg/kg	0.73
Di-n-octyl phthalate	ND	mg/kg	0.73

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ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-146

## Semivolatile Organics

Enseco  
Corning Environmental Services

## Method 8270

Client Name: Gram, Inc.  
Client ID: 02380001  
Lab ID: 077507-0007-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(2.00,4.00,)

Sampled: 31 AUG 94  
Prepared: 09 SEP 94

Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.73
Fluoranthene	ND	mg/kg	0.73
Fluorene	ND	mg/kg	0.73
Hexachlorobenzene	ND	mg/kg	0.73
Hexachlorobutadiene	ND	mg/kg	0.73
Hexachlorocyclopentadiene	ND	mg/kg	0.73
Hexachloroethane	ND	mg/kg	0.73
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.73
Isophorone	ND	mg/kg	0.73
2-Methylnaphthalene	ND	mg/kg	0.73
2-Methylphenol	ND	mg/kg	0.35
4-Methylphenol	ND	mg/kg	0.35
Naphthalene	ND	mg/kg	0.73
2-Nitroaniline	ND	mg/kg	3.5
3-Nitroaniline	ND	mg/kg	3.5
4-Nitroaniline	ND	mg/kg	3.5
Nitrobenzene	ND	mg/kg	0.73
2-Nitrophenol	ND	mg/kg	0.35
4-Nitrophenol	ND	mg/kg	1.7
N-Nitrosodiphenylamine	ND	mg/kg	0.73
N-Nitroso-di- n-propylamine	ND	mg/kg	0.73
Pentachlorophenol	ND	mg/kg	3.5
Phenanthrene	ND	mg/kg	0.73
Phenol	ND	mg/kg	0.35
Pyrene	ND	mg/kg	0.73
1,2,4-Trichlorobenzene	ND	mg/kg	0.73
2,4,5-Trichlorophenol	ND	mg/kg	3.5
2,4,6-Trichlorophenol	ND	mg/kg	0.35

Surrogate	Recovery	
Nitrobenzene-d5	92	%
2-Fluorobiphenyl	83	%
Terphenyl-d14	137	%
Phenol-d5	83	%
2-Fluorophenol	83	%
2,4,6-Tribromophenol	71	%

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-1417

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02380001 (2.00,4.00,)

Lab ID: 077507-007-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 31 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	20000	ug/Kg	b
Unknown	510	ug/Kg	b
Octane, 4-Methyl-	300	ug/Kg	b
Octane, 3-Methyl-	210	ug/Kg	b
Unknown Oxygenated Compound	590	ug/Kg	b
Unknown Lactone	530	ug/Kg	
Unknown Ketone	1300	ug/Kg	b
Unknown	150	ug/Kg	
Unknown Oxygenated Compound	880	ug/Kg	
Unknown Oxygenated Compound	740	ug/Kg	
Tetracosane	150	ug/Kg	
Pentacosane	690	ug/kg	
Hexacosane	160	ug/Kg	
Unknown Alkane	240	ug/Kg	
Unknown Alkane	160	ug/kg	
Unknown Alkane	280	ug/Kg	
Unknown	250	ug/Kg	
Unknown	140	ug/Kg	
Unknown	250	ug/kg	

b : Compound found in the method blank



Semivolatile Organics

Method 8270

Client Name: Gram, Inc.

Client ID: 02920001 (3.00,6.00,)

Lab ID: 077507-0009-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 31 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.79
Acenaphthylene	ND	mg/kg	0.79
Anthracene	ND	mg/kg	0.79
Benzo(a)anthracene	ND	mg/kg	0.79
Benzo(a)pyrene	ND	mg/kg	0.79
Benzo(b)fluoranthene	ND	mg/kg	0.79
Benzo(g,h,i)perylene	ND	mg/kg	0.79
Benzo(k)fluoranthene	ND	mg/kg	0.79
Benzoic acid	ND	mg/kg	1.8
Benzoal alcohol	ND	mg/kg	1.5
4-Bromophenyl			
phenyl ether	ND	mg/kg	0.79
Butyl benzyl phthalate	ND	mg/kg	0.79
4-Chloroaniline	ND	mg/kg	1.5
bis(2-Chloroethoxy)-			
methane	ND	mg/kg	0.79
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.79
bis(2-Chloroethyl) ether	ND	mg/kg	0.79
4-Chloro-3-methylphenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.79
2-Chlorophenol	ND	mg/kg	0.37
4-Chlorophenyl			
phenyl ether	ND	mg/kg	0.79
Chrysene	ND	mg/kg	0.79
Di-n-butyl phthalate	ND	mg/kg	0.79
Dibenz(a,h)anthracene	ND	mg/kg	0.79
Dibenzofuran	ND	mg/kg	0.79
1,2-Dichlorobenzene	ND	mg/kg	0.79
1,3-Dichlorobenzene	ND	mg/kg	0.79
1,4-Dichlorobenzene	ND	mg/kg	0.79
3,3'-Dichlorobenzidine	ND	mg/kg	1.5
2,4-Dichlorophenol	ND	mg/kg	0.37
Diethyl phthalate	ND	mg/kg	0.79
2,4-Dimethylphenol	ND	mg/kg	0.37
Dimethyl phthalate	ND	mg/kg	0.79
4,6-Dinitro-			
2-methylphenol	ND	mg/kg	3.7
2,4-Dinitrophenol	ND	mg/kg	3.7
2,4-Dinitrotoluene	ND	mg/kg	0.79
2,6-Dinitrotoluene	ND	mg/kg	0.79
Di-n-octyl phthalate	ND	mg/kg	0.79

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-149

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02920001 (3.00,6.00,)  
Lab ID: 077507-0009-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 31 AUG 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.79
Fluoranthene	ND	mg/kg	0.79
Fluorene	ND	mg/kg	0.79
Hexachlorobenzene	ND	mg/kg	0.79
Hexachlorobutadiene	ND	mg/kg	0.79
Hexachlorocyclopentadiene	ND	mg/kg	0.79
Hexachloroethane	ND	mg/kg	0.79
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.79
Isophorone	ND	mg/kg	0.79
2-Methylnaphthalene	ND	mg/kg	0.79
2-Methylphenol	ND	mg/kg	0.37
4-Methylphenol	ND	mg/kg	0.37
Naphthalene	ND	mg/kg	0.79
2-Nitroaniline	ND	mg/kg	3.7
3-Nitroaniline	ND	mg/kg	3.7
4-Nitroaniline	ND	mg/kg	3.7
Nitrobenzene	ND	mg/kg	0.79
2-Nitrophenol	ND	mg/kg	0.37
4-Nitrophenol	ND	mg/kg	1.8
N-Nitrosodiphenylamine	ND	mg/kg	0.79
N-Nitroso-di- n-propylamine	ND	mg/kg	0.79
Pentachlorophenol	ND	mg/kg	3.7
Phenanthrene	ND	mg/kg	0.79
Phenol	ND	mg/kg	0.37
Pyrene	ND	mg/kg	0.79
1,2,4-Trichlorobenzene	ND	mg/kg	0.79
2,4,5-Trichlorophenol	ND	mg/kg	3.7
2,4,6-Trichlorophenol	ND	mg/kg	0.37

Surrogate	Recovery
Nitrobenzene-d5	72 %
2-Fluorobiphenyl	69 %
Terphenyl-d14	131 %
Phenol-d5	66 %
2-Fluorophenol	65 %
2,4,6-Tribromophenol	68 %

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-150

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02920001 (3.00,6.00,)

Lab ID: 077507-009-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 31 AUG 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	12000	ug/Kg	b
Unknown	380	ug/Kg	b
Octane, 4-Methyl-	210	ug/Kg	b
Octane, 3-Methyl-	150	ug/Kg	b
Unknown Oxygenated Compound	450	ug/Kg	b
Unknown	300	ug/Kg	
Unknown Ketone	470	ug/Kg	b
Unknown Oxygenated Compound	250	ug/Kg	
Unknown Oxygenated Compound	190	ug/Kg	
Propanoic Acid, 2-Methyl-, 1-1(1,1-Dimethyl)-	170	ug/Kg	or isomer b
Unknown	430	ug/Kg	b
Unknown	150	ug/Kg	
Unknown	210	ug/Kg	

b : Compound found in the method blank

## Semivolatile Organics

Enseco  
Corning Environmental Services

## Method 8270

Client Name: Gram, Inc.

Client ID: 02540001 (2.50,6.00,)

Lab ID: 077507-0010-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 01 SEP 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.79
Acenaphthylene	ND	mg/kg	0.79
Anthracene	ND	mg/kg	0.79
Benzo(a)anthracene	ND	mg/kg	0.79
Benzo(a)pyrene	ND	mg/kg	0.79
Benzo(b)fluoranthene	ND	mg/kg	0.79
Benzo(g,h,i)perylene	ND	mg/kg	0.79
Benzo(k)fluoranthene	ND	mg/kg	0.79
Benzoic acid	ND	mg/kg	1.8
Benzyl alcohol	ND	mg/kg	1.5
4-Bromophenyl			
phenyl ether	ND	mg/kg	0.79
Butyl benzyl phthalate	ND	mg/kg	0.79
4-Chloroaniline	ND	mg/kg	1.5
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.79
bis(2-Chloroethoxy)-			
methane	ND	mg/kg	0.79
bis(2-Chloroethyl) ether	ND	mg/kg	0.79
4-Chloro-3-methylphenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.79
2-Chlorophenol	ND	mg/kg	0.37
4-Chlorophenyl			
phenyl ether	ND	mg/kg	0.79
Chrysene	ND	mg/kg	0.79
Di-n-butyl phthalate	ND	mg/kg	0.79
Dibenz(a,h)anthracene	ND	mg/kg	0.79
Dibenzofuran	ND	mg/kg	0.79
1,2-Dichlorobenzene	ND	mg/kg	0.79
1,3-Dichlorobenzene	ND	mg/kg	0.79
1,4-Dichlorobenzene	ND	mg/kg	0.79
3,3'-Dichlorobenzidine	ND	mg/kg	1.5
2,4-Dichlorophenol	ND	mg/kg	0.37
Diethyl phthalate	ND	mg/kg	0.79
2,4-Dimethylphenol	ND	mg/kg	0.37
Dimethyl phthalate	ND	mg/kg	0.79
4,6-Dinitro-			
2-methylphenol	ND	mg/kg	3.7
2,4-Dinitrophenol	ND	mg/kg	3.7
2,4-Dinitrotoluene	ND	mg/kg	0.79
2,6-Dinitrotoluene	ND	mg/kg	0.79
Di-n-octyl phthalate	ND	mg/kg	0.79

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ND = Not detected

NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

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Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02540001 (2.50,6.00,)  
Lab ID: 077507-0010-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.79
Fluoranthene	ND	mg/kg	0.79
Fluorene	ND	mg/kg	0.79
Hexachlorobenzene	ND	mg/kg	0.79
Hexachlorobutadiene	ND	mg/kg	0.79
Hexachlorocyclopentadiene	ND	mg/kg	0.79
Hexachloroethane	ND	mg/kg	0.79
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.79
Isophorone	ND	mg/kg	0.79
2-Methylnaphthalene	ND	mg/kg	0.37
2-Methylphenol	ND	mg/kg	0.37
4-Methylphenol	ND	mg/kg	0.79
Naphthalene	ND	mg/kg	3.7
2-Nitroaniline	ND	mg/kg	3.7
3-Nitroaniline	ND	mg/kg	3.7
4-Nitroaniline	ND	mg/kg	0.79
Nitrobenzene	ND	mg/kg	0.37
2-Nitrophenol	ND	mg/kg	1.8
4-Nitrophenol	ND	mg/kg	0.79
N-Nitrosodiphenylamine	ND	mg/kg	0.79
N-Nitroso-di- n-propylamine	ND	mg/kg	3.7
Pentachlorophenol	ND	mg/kg	0.79
Phenanthrene	ND	mg/kg	0.37
Phenol	ND	mg/kg	0.79
Pyrene	ND	mg/kg	0.79
1,2,4-Trichlorobenzene	ND	mg/kg	3.7
2,4,5-Trichlorophenol	ND	mg/kg	0.37
2,4,6-Trichlorophenol	ND	mg/kg	

Surrogate	Recovery
Nitrobenzene-d5	96 %
2-Fluorobiphenyl	84 %
Terphenyl-d14	117 %
Phenol-d5	76 %
2-Fluorophenol	67 %
2,4,6-Tribromophenol	36 %

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

2-153

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02540001 (2.50,6.00,)

Lab ID: 077507-010-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 01 SEP 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	22000	ug/Kg	b
Unknown	460	ug/Kg	b
Octane, 4-Methyl-	340	ug/Kg	b
Octane, 3-Methyl-	240	ug/Kg	b
Unknown Oxygenated Compound	690	ug/Kg	b
Unknown Ketone	1200	ug/Kg	b
Unknown Oxygenated Compound	320	ug/Kg	
Unknown Oxygenated Compound	180	ug/Kg	
Unknown Halogenated	230	ug/Kg	
Unknown	340	ug/Kg	b
Unknown	140	ug/Kg	

b : Compound found in the method blank

I-154

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02550001 (2.50,6.00,)  
Lab ID: 077507-0011-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	0.78
Acenaphthylene	ND	mg/kg	0.78
Anthracene	ND	mg/kg	0.78
Benzo(a)anthracene	ND	mg/kg	0.78
Benzo(a)pyrene	ND	mg/kg	0.78
Benzo(b)fluoranthene	ND	mg/kg	0.78
Benzo(g,h,i)perylene	ND	mg/kg	0.78
Benzo(k)fluoranthene	ND	mg/kg	0.78
Benzoic acid	ND	mg/kg	1.8
Benzyl alcohol	ND	mg/kg	1.4
4-Bromophenyl phenyl ether	ND	mg/kg	0.78
Butyl benzyl phthalate	ND	mg/kg	0.78
4-Chloroaniline	ND	mg/kg	1.4
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.78
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.78
bis(2-Chloroethyl) ether	ND	mg/kg	0.78
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.78
2-Chlorophenol	ND	mg/kg	0.37
4-Chlorophenyl phenyl ether	ND	mg/kg	0.78
Chrysene	ND	mg/kg	0.78
Di-n-butyl phthalate	ND	mg/kg	0.78
Dibenz(a,h)anthracene	ND	mg/kg	0.78
Dibenzofuran	ND	mg/kg	0.78
1,2-Dichlorobenzene	ND	mg/kg	0.78
1,3-Dichlorobenzene	ND	mg/kg	0.78
1,4-Dichlorobenzene	ND	mg/kg	0.78
3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.37
Diethyl phthalate	ND	mg/kg	0.78
2,4-Dimethylphenol	ND	mg/kg	0.37
Dimethyl phthalate	ND	mg/kg	0.78
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.7
2,4-Dinitrophenol	ND	mg/kg	3.7
2,4-Dinitrotoluene	ND	mg/kg	0.78
2,6-Dinitrotoluene	ND	mg/kg	0.78
Di-n-octyl phthalate	ND	mg/kg	0.78

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

J-155

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02550001 (2.50,6.00,)  
Lab ID: 077507-0011-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: 09 SEP 94  
Received: 03 SEP 94  
Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.78
Fluoranthene	ND	mg/kg	0.78
Fluorene	ND	mg/kg	0.78
Hexachlorobenzene	ND	mg/kg	0.78
Hexachlorobutadiene	ND	mg/kg	0.78
Hexachlorocyclopentadiene	ND	mg/kg	0.78
Hexachloroethane	ND	mg/kg	0.78
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.78
Isophorone	ND	mg/kg	0.78
2-Methylnaphthalene	ND	mg/kg	0.78
2-Methylphenol	ND	mg/kg	0.37
4-Methylphenol	ND	mg/kg	0.37
Naphthalene	ND	mg/kg	0.78
2-Nitroaniline	ND	mg/kg	3.7
3-Nitroaniline	ND	mg/kg	3.7
4-Nitroaniline	ND	mg/kg	3.7
Nitrobenzene	ND	mg/kg	0.78
2-Nitrophenol	ND	mg/kg	0.37
4-Nitrophenol	ND	mg/kg	1.8
N-Nitrosodiphenylamine	ND	mg/kg	0.78
N-Nitroso-di- n-propylamine	ND	mg/kg	0.78
Pentachlorophenol	ND	mg/kg	3.7
Phenanthrene	ND	mg/kg	0.78
Phenol	ND	mg/kg	0.37
Pyrene	ND	mg/kg	0.78
1,2,4-Trichlorobenzene	ND	mg/kg	0.78
2,4,5-Trichlorophenol	ND	mg/kg	3.7
2,4,6-Trichlorophenol	ND	mg/kg	0.37

Surrogate	Recovery	
Nitrobenzene-d5	95	%
2-Fluorobiphenyl	88	%
Terphenyl-d14	134	%
Phenol-d5	90	%
2-Fluorophenol	87	%
2,4,6-Tribromophenol	69	%

Percent Moisture is 10%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-156



Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02550001 (2.50,6.00,)

Lab ID: 077507-011-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 01 SEP 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	13000	ug/Kg	b
Unknown	430	ug/Kg	b
Octane, 4-Methyl-	270	ug/Kg	b
Octane, 3-Methyl-	190	ug/Kg	b
Unknown Oxygenated Compound	590	ug/Kg	b
Unknown Lactone	640	ug/Kg	
Unknown Ketone	770	ug/kg	b
Unknown Oxygenated Compound	430	ug/Kg	
Unknown Oxygenated Compound	230	ug/Kg	
Unknown	280	ug/Kg	b
Unknown	220	ug/Kg	
Unknown Alkane	160	ug/Kg	
Unknown	160	ug/Kg	
Unknown	180	ug/Kg	
Unknown	200	ug/Kg	

b : Compound found in the method blank

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.

Client ID: 02580001 (2.50,6.00,)

Lab ID: 077507-0012-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 01 SEP 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Reporting Units	Limit
Acenaphthene	ND	mg/kg	0.78
Acenaphthylene	ND	mg/kg	0.78
Anthracene	ND	mg/kg	0.78
Benzo(a)anthracene	ND	mg/kg	0.78
Benzo(a)pyrene	ND	mg/kg	0.78
Benzo(b)fluoranthene	ND	mg/kg	0.78
Benzo(g,h,i)perylene	ND	mg/kg	0.78
Benzo(k)fluoranthene	ND	mg/kg	0.78
Benzoic acid	ND	mg/kg	1.8
Benzyl alcohol	ND	mg/kg	1.5
4-Bromophenyl phenyl ether	ND	mg/kg	0.78
Butyl benzyl phthalate	ND	mg/kg	0.78
4-Chloroaniline	ND	mg/kg	1.5
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.78
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.78
bis(2-Chloroethyl) ether	ND	mg/kg	0.78
4-Chloro-3-methylphenol	ND	mg/kg	1.5
2-Chloronaphthalene	ND	mg/kg	0.78
2-Chlorophenol	ND	mg/kg	0.37
4-Chlorophenyl phenyl ether	ND	mg/kg	0.78
Chrysene	ND	mg/kg	0.78
Di-n-butyl phthalate	ND	mg/kg	0.78
Dibenz(a,h)anthracene	ND	mg/kg	0.78
Dibenzofuran	ND	mg/kg	0.78
1,2-Dichlorobenzene	ND	mg/kg	0.78
1,3-Dichlorobenzene	ND	mg/kg	0.78
1,4-Dichlorobenzene	ND	mg/kg	0.78
3,3'-Dichlorobenzidine	ND	mg/kg	1.5
2,4-Dichlorophenol	ND	mg/kg	0.37
Diethyl phthalate	ND	mg/kg	0.78
2,4-Dimethylphenol	ND	mg/kg	0.37
Dimethyl phthalate	ND	mg/kg	0.78
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.7
2,4-Dinitrophenol	ND	mg/kg	3.7
2,4-Dinitrotoluene	ND	mg/kg	0.78
2,6-Dinitrotoluene	ND	mg/kg	0.78
Di-n-octyl phthalate	ND	mg/kg	0.78

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-158

## Semivolatile Organics

## Method 8270

Client Name: Gram, Inc.  
 Client ID: 02580001 (2.50,6.00,)  
 Lab ID: 077507-0012-SA  
 Matrix: SOIL  
 Authorized: 03 SEP 94  
 Sampled: 01 SEP 94  
 Prepared: 09 SEP 94  
 Received: 03 SEP 94  
 Analyzed: 20 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	mg/kg	0.78
Fluoranthene	ND	mg/kg	0.78
Fluorene	ND	mg/kg	0.78
Hexachlorobenzene	ND	mg/kg	0.78
Hexachlorobutadiene	ND	mg/kg	0.78
Hexachlorocyclopentadiene	ND	mg/kg	0.78
Hexachloroethane	ND	mg/kg	0.78
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.78
Isophorone	ND	mg/kg	0.78
2-Methylnaphthalene	ND	mg/kg	0.78
2-Methylphenol	ND	mg/kg	0.37
4-Methylphenol	ND	mg/kg	0.37
Naphthalene	ND	mg/kg	0.78
2-Nitroaniline	ND	mg/kg	3.7
3-Nitroaniline	ND	mg/kg	3.7
4-Nitroaniline	ND	mg/kg	3.7
Nitrobenzene	ND	mg/kg	0.78
2-Nitrophenol	ND	mg/kg	0.37
4-Nitrophenol	ND	mg/kg	1.8
N-Nitrosodiphenylamine	ND	mg/kg	0.78
N-Nitroso-di-n-propylamine	ND	mg/kg	0.78
Pentachlorophenol	ND	mg/kg	3.7
Phenanthrene	ND	mg/kg	0.78
Phenol	ND	mg/kg	0.37
Pyrene	ND	mg/kg	0.78
1,2,4-Trichlorobenzene	ND	mg/kg	0.78
2,4,5-Trichlorophenol	ND	mg/kg	3.7
2,4,6-Trichlorophenol	ND	mg/kg	0.37

Surrogate	Recovery
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Nitrobenzene-d5	89	%
2-Fluorobiphenyl	95	%
Terphenyl-d14	115	%
Phenol-d5	93	%
2-Fluorophenol	81	%
2,4,6-Tribromophenol	82	%

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

ND = Not detected  
 NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
 Rev 230787

I-159

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.

Client ID: 02580001 (2.50,6.00,)

Lab ID: 077507-012-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 01 SEP 94

Prepared: 09 SEP 94

Received: 03 SEP 94

Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	450	ug/Kg	b
Unknown Lactone	510	ug/kg	
Unknown Ketone	550	ug/Kg	b
Unknown Oxygenated Compound	640	ug/Kg	
Unknown Oxygenated Compound	530	ug/Kg	
Unknown Halogenated	530	ug/Kg	
Unknown	240	ug/Kg	b
Unknown	1300	ug/kg	
Unknown	280	ug/kg	
Unknown	140	ug/Kg	
Unknown	400	ug/kg	

b : Compound found in the method blank

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QC LOT ASSIGNMENT REPORT  
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077507-0002-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0003-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0004-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0005-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0006-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0007-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0009-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0010-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0010-MS	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0010-SD	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0011-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A
077507-0012-SA	SOIL	8270-IRPSL	08 SEP 94-11A	08 SEP 94-11A

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METHOD BLANK REPORT  
Semivolatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A			
Acenaphthene	ND	mg/kg	0.70
Acenaphthylene	ND	mg/kg	0.70
Anthracene	ND	mg/kg	0.70
Benzo(a)anthracene	ND	mg/kg	0.70
Benzo(a)pyrene	ND	mg/kg	0.70
Benzo(b)fluoranthene	ND	mg/kg	0.70
Benzo(g,h,i)perylene	ND	mg/kg	0.70
Benzo(k)fluoranthene	ND	mg/kg	1.6
Benzoic acid	ND	mg/kg	1.3
Benzyl alcohol	ND	mg/kg	
4-Bromophenyl	ND	mg/kg	0.70
phenyl ether	ND	mg/kg	0.70
Butyl benzyl phthalate	ND	mg/kg	1.3
4-Chloroaniline	ND	mg/kg	0.70
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	
bis(2-Chloroethoxy)-	ND	mg/kg	0.70
methane	ND	mg/kg	0.70
bis(2-Chloroethyl) ether	ND	mg/kg	1.3
4-Chloro-3-methylphenol	ND	mg/kg	0.70
2-Chloronaphthalene	ND	mg/kg	0.33
2-Chlorophenol	ND	mg/kg	
4-Chlorophenyl	ND	mg/kg	0.70
phenyl ether	ND	mg/kg	0.70
Chrysene	ND	mg/kg	0.70
Di-n-butyl phthalate	ND	mg/kg	0.70
Dibenz(a,h)anthracene	ND	mg/kg	0.70
Dibenzofuran	ND	mg/kg	0.70
1,2-Dichlorobenzene	ND	mg/kg	0.70
1,3-Dichlorobenzene	ND	mg/kg	0.70
1,4-Dichlorobenzene	ND	mg/kg	1.3
3,3'-Dichlorobenzidine	ND	mg/kg	0.33
2,4-Dichlorophenol	ND	mg/kg	0.70
Diethyl phthalate	ND	mg/kg	0.33
2,4-Dimethylphenol	ND	mg/kg	0.70
Dimethyl phthalate	ND	mg/kg	
4,6-Dinitro-	ND	mg/kg	3.3
2-methylphenol	ND	mg/kg	3.3
2,4-Dinitrophenol	ND	mg/kg	0.70
2,4-Dinitrotoluene	ND	mg/kg	0.70
2,6-Dinitrotoluene	ND	mg/kg	0.70
Di-n-octyl phthalate	ND	mg/kg	

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METHOD BLANK REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A			
Benzo(b)fluoranthene	ND	mg/kg	0.70
Benzo(g,h,i)perylene	ND	mg/kg	0.70
Benzo(k)fluoranthene	ND	mg/kg	0.70
Benzoic acid	ND	mg/kg	1.6
Benzyl alcohol	ND	mg/kg	1.3
4-Bromophenyl phenyl ether	ND	mg/kg	0.70
Butyl benzyl phthalate	ND	mg/kg	0.70
4-Chloroaniline	ND	mg/kg	1.3
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.70
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.70
bis(2-Chloroethyl) ether	ND	mg/kg	0.70
4-Chloro-3-methylphenol	ND	mg/kg	1.3
2-Chloronaphthalene	ND	mg/kg	0.70
2-Chlorophenol	ND	mg/kg	0.33
4-Chlorophenyl phenyl ether	ND	mg/kg	0.70
Chrysene	ND	mg/kg	0.70
Di-n-butyl phthalate	ND	mg/kg	0.70
Dibenz(a,h)anthracene	ND	mg/kg	0.70
Dibenzofuran	ND	mg/kg	0.70
1,2-Dichlorobenzene	ND	mg/kg	0.70
1,3-Dichlorobenzene	ND	mg/kg	0.70
1,4-Dichlorobenzene	ND	mg/kg	0.70
3,3'-Dichlorobenzidine	ND	mg/kg	1.3
2,4-Dichlorophenol	ND	mg/kg	0.33
Diethyl phthalate	ND	mg/kg	0.70
2,4-Dimethylphenol	ND	mg/kg	0.33
Dimethyl phthalate	ND	mg/kg	0.70
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.3
2,4-Dinitrophenol	ND	mg/kg	3.3
2,4-Dinitrotoluene	ND	mg/kg	0.70
2,6-Dinitrotoluene	ND	mg/kg	0.70
Di-n-octyl phthalate	ND	mg/kg	0.70
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.70
Fluoranthene	ND	mg/kg	0.70
Fluorene	ND	mg/kg	0.70
Hexachlorobenzene	ND	mg/kg	0.70

METHOD BLANK REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A			
bis(2-Ethylhexyl)-phthalate	ND	mg/kg	0.70
Fluoranthene	ND	mg/kg	0.70
Fluorene	ND	mg/kg	0.70
Hexachlorobenzene	ND	mg/kg	0.70
Hexachlorobutadiene	ND	mg/kg	0.70
Hexachlorocyclopentadiene	ND	mg/kg	0.70
Hexachloroethane	ND	mg/kg	0.70
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.70
Isophorone	ND	mg/kg	0.70
2-Methylnaphthalene	ND	mg/kg	0.70
2-Methylphenol	ND	mg/kg	0.33
4-Methylphenol	ND	mg/kg	0.33
Naphthalene	ND	mg/kg	0.70
2-Nitroaniline	ND	mg/kg	3.3
3-Nitroaniline	ND	mg/kg	3.3
4-Nitroaniline	ND	mg/kg	3.3
Nitrobenzene	ND	mg/kg	0.70
2-Nitrophenol	ND	mg/kg	0.33
4-Nitrophenol	ND	mg/kg	1.6
N-Nitrosodiphenylamine	ND	mg/kg	0.70
N-Nitroso-di-n-propylamine	ND	mg/kg	0.70
Pentachlorophenol	ND	mg/kg	3.3
Phenanthrene	ND	mg/kg	0.70
Phenol	ND	mg/kg	0.33
Pyrene	ND	mg/kg	0.70
1,2,4-Trichlorobenzene	ND	mg/kg	0.70
2,4,5-Trichlorophenol	ND	mg/kg	3.3
2,4,6-Trichlorophenol	ND	mg/kg	0.33

Test: 8270-IRPMS-L-S  
Matrix: SOIL  
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A

Acenaphthene	ND	mg/kg	0.70
Acenaphthylene	ND	mg/kg	0.70
Anthracene	ND	mg/kg	0.70
Benzo(a)anthracene	ND	mg/kg	0.70
Benzo(a)pyrene	ND	mg/kg	0.70



METHOD BLANK REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A			
Hexachlorobutadiene	ND	mg/kg	0.70
Hexachlorocyclopentadiene	ND	mg/kg	0.70
Hexachloroethane	ND	mg/kg	0.70
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.70
Isophorone	ND	mg/kg	0.70
2-Methylnaphthalene	ND	mg/kg	0.33
2-Methylphenol	ND	mg/kg	0.33
4-Methylphenol	ND	mg/kg	0.70
Naphthalene	ND	mg/kg	3.3
2-Nitroaniline	ND	mg/kg	3.3
3-Nitroaniline	ND	mg/kg	3.3
4-Nitroaniline	ND	mg/kg	0.70
Nitrobenzene	ND	mg/kg	0.33
2-Nitrophenol	ND	mg/kg	1.6
4-Nitrophenol	ND	mg/kg	0.70
N-Nitrosodiphenylamine	ND	mg/kg	0.70
N-Nitroso-di-n-propylamine	ND	mg/kg	3.3
Pentachlorophenol	ND	mg/kg	0.70
Phenanthrene	ND	mg/kg	0.33
Phenol	ND	mg/kg	0.70
Pyrene	ND	mg/kg	0.70
1,2,4-Trichlorobenzene	ND	mg/kg	3.3
2,4,5-Trichlorophenol	ND	mg/kg	0.33
2,4,6-Trichlorophenol	ND	mg/kg	

Test: 8270-IRPMS-L-S  
Matrix: SOIL  
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A

Acenaphthene	ND	mg/kg	0.70
Acenaphthylene	ND	mg/kg	0.70
Anthracene	ND	mg/kg	0.70
Benzo(a)anthracene	ND	mg/kg	0.70
Benzo(a)pyrene	ND	mg/kg	0.70
Benzo(b)fluoranthene	ND	mg/kg	0.70
Benzo(g,h,i)perylene	ND	mg/kg	0.70
Benzo(k)fluoranthene	ND	mg/kg	1.6
Benzoic acid	ND	mg/kg	1.3
Benzyl alcohol	ND	mg/kg	

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METHOD BLANK REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A			
4-Bromophenyl phenyl ether	ND	mg/kg	0.70
Butyl benzyl phthalate	ND	mg/kg	0.70
4-Chloroaniline	ND	mg/kg	1.3
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.70
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.70
bis(2-Chloroethyl) ether	ND	mg/kg	0.70
4-Chloro-3-methylphenol	ND	mg/kg	1.3
2-Chloronaphthalene	ND	mg/kg	0.70
2-Chlorophenol	ND	mg/kg	0.33
4-Chlorophenyl phenyl ether	ND	mg/kg	0.70
Chrysene	ND	mg/kg	0.70
Di-n-butyl phthalate	ND	mg/kg	0.70
Dibenz(a,h)anthracene	ND	mg/kg	0.70
Dibenzofuran	ND	mg/kg	0.70
1,2-Dichlorobenzene	ND	mg/kg	0.70
1,3-Dichlorobenzene	ND	mg/kg	0.70
1,4-Dichlorobenzene	ND	mg/kg	0.70
3,3'-Dichlorobenzidine	ND	mg/kg	1.3
2,4-Dichlorophenol	ND	mg/kg	0.33
Diethyl phthalate	ND	mg/kg	0.70
2,4-Dimethylphenol	ND	mg/kg	0.33
Dimethyl phthalate	ND	mg/kg	0.70
4,6-Dinitro- 2-methylphenol	ND	mg/kg	3.3
2,4-Dinitrophenol	ND	mg/kg	3.3
2,4-Dinitrotoluene	ND	mg/kg	0.70
2,6-Dinitrotoluene	ND	mg/kg	0.70
Di-n-octyl phthalate	ND	mg/kg	0.70
bis(2-Ethylhexyl)- phthalate	ND	mg/kg	0.70
Fluoranthene	ND	mg/kg	0.70
Fluorene	ND	mg/kg	0.70
Hexachlorobenzene	ND	mg/kg	0.70
Hexachlorobutadiene	ND	mg/kg	0.70
Hexachlorocyclopentadiene	ND	mg/kg	0.70
Hexachloroethane	ND	mg/kg	0.70
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.70
Isophorone	ND	mg/kg	0.70

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METHOD BLANK REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S			
Matrix: SOIL			
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A			
2-Methylnaphthalene	ND	mg/kg	0.70
2-Methylphenol	ND	mg/kg	0.33
4-Methylphenol	ND	mg/kg	0.33
Naphthalene	ND	mg/kg	0.70
2-Nitroaniline	ND	mg/kg	3.3
3-Nitroaniline	ND	mg/kg	3.3
4-Nitroaniline	ND	mg/kg	3.3
Nitrobenzene	ND	mg/kg	0.70
2-Nitrophenol	ND	mg/kg	0.33
4-Nitrophenol	ND	mg/kg	1.6
N-Nitrosodiphenylamine	ND	mg/kg	0.70
N-Nitroso-di-			
n-propylamine	ND	mg/kg	0.70
Pentachlorophenol	ND	mg/kg	3.3
Phenanthrene	ND	mg/kg	0.70
Phenol	ND	mg/kg	0.33
Pyrene	ND	mg/kg	0.70
1,2,4-Trichlorobenzene	ND	mg/kg	0.70
2,4,5-Trichlorophenol	ND	mg/kg	3.3
2,4,6-Trichlorophenol	ND	mg/kg	0.33

Semivolatiles Library Search (20 Compound ID)

Method 8270

Client Name: Gram, Inc.  
Client ID: SBLK2 08SEP94-11A  
Lab ID: Method Blank  
Matrix: SOIL  
Authorized: 30 AUG 94

Sampled: NA  
Prepared: 08 SEP 94

Received: NA  
Analyzed: 20 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown Oxygenated Compound	29000	ug/Kg	
Unknown	560	ug/Kg	
Octane, 4-Methyl-	450	ug/Kg	
Octane, 3-Methyl-	310	ug/Kg	
Unknown Oxygenated Compound	820	ug/Kg	
Unknown Ketone	140	ug/kg	
Propanoic Acid, 2-Methyl-, 1-(1-Dimethylethyl)-2-methyl-	210	ug/Kg	or isomer
Unknown Halogenated	230	ug/Kg	
Unknown	220	ug/kg	

LABORATORY CONTROL SAMPLE REPORT  
Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits

Category: 8270-IRPSL Semivolatile Organics  
(Contain all compounds for IRPMS Low soil)

Matrix: SOIL  
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A  
Concentration Units: mg/kg

Phenol	6.70	5.19	77	41-123
bis(2-Chloroethyl) ether	3.30	3.26	99	43-117
2-Chlorophenol	6.70	4.76	71	44-116
1,3-Dichlorobenzene	3.30	2.63	80	39-106
1,4-Dichlorobenzene	3.30	2.51	76	40-106
Benzyl alcohol	3.30	3.96	120	37-125
1,2-Dichlorobenzene	3.30	2.55	77	40-107
2-Methylphenol	6.70	4.80	72	44-128
2,2'-Oxybis(1-chloropropane)	3.30	2.85	86	38-116
4-Methylphenol	6.70	5.96	89	36-138
N-Nitroso-di-n-propylamine	3.30	3.32	101	43-123
Hexachloroethane	3.30	2.80	85	39-106
Nitrobenzene	3.30	3.32	101	35-180
Isophorone	3.30	2.92	88	20-134
2-Nitrophenol	6.70	4.92	73	40-128
2,4-Dimethylphenol	6.70	5.37	80	38-127
Benzoic acid	6.70	NA	NC	1-137
bis(2-Chloroethoxy)-methane	3.30	3.47	105	40-117
2,4-Dichlorophenol	6.70	4.99	74	34-129
1,2,4-Trichlorobenzene	3.30	2.75	83	36-114
Naphthalene	3.30	2.62	79	41-108
4-Chloroaniline	3.30	0.700	21	0-63
Hexachlorobutadiene	3.30	2.56	78	33-114
4-Chloro-3-methylphenol	6.70	6.13	91	33-143
2-Methylnaphthalene	3.30	2.82	85	0-197
Hexachlorocyclopentadiene	3.30	2.39	72	29-111
2,4,6-Trichlorophenol	6.70	5.50	82	41-132
2,4,5-Trichlorophenol	6.70	4.24	63	36-129
2-Chloronaphthalene	3.30	2.71	82	40-119
2-Nitroaniline	3.30	3.72	113	45-129
Dimethyl phthalate	3.30	3.01	91	48-116
Acenaphthylene	3.30	2.69	82	43-114
2,6-Dinitrotoluene	3.30	3.29	100	44-127
3-Nitroaniline	3.30	2.36	72	0-119
Acenaphthene	3.30	2.69	82	41-113
2,4-Dinitrophenol	6.70	2.64	39	0-139
4-Nitrophenol	6.70	7.21	108	41-144
Dibenzofuran	3.30	2.83	86	42-116

N = Not Applicable  
N = Not Calculated, calculation not applicable.  
ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE REPORT  
Semivolatile Organics by GC/MS

(cont.)

Analyte	Concentration		Accuracy(%) (cont.)	
	Spiked	Measured	LCS	Limits
Category: 8270-IRPSL Semivolatile Organics (Contain all compounds for IRPMS Low soil)				
Matrix: SOIL				
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A				
Concentration Units: mg/kg				
2,4-Dinitrotoluene	3.30	3.21	97	43-129
Diethyl phthalate	3.30	2.74	83	46-118
Fluorene	3.30	2.69	82	43-117
4-Chlorophenyl phenyl ether	3.30	2.43	74	41-120
4-Nitroaniline	3.30	3.37	102	0-189
4,6-Dinitro- 2-methylphenol	6.70	3.82	57	0-181
N-Nitrosodiphenylamine	3.30	3.12	95	9-241
4-Bromophenyl phenyl ether	3.30	2.95	89	41-126
Hexachlorobenzene	3.30	2.76	84	40-126
Pentachlorophenol	6.70	5.82	87	29-137
Phenanthrene	3.30	2.80	85	54-120
Anthracene	3.30	2.72	82	46-119
Di-n-butyl phthalate	3.30	3.21	97	44-130
Fluoranthene	3.30	3.02	92	44-126
Pyrene	3.30	3.32	101	52-115
Butyl benzyl phthalate	3.30	3.66	111	50-131
3,3'-Dichlorobenzidine	3.30	1.83	55	7-141
Benzo(a)anthracene	3.30	3.33	101	48-127
Chrysene	3.30	2.83	86	49-123
bis(2-Ethylhexyl)- phthalate	3.30	3.57	108	48-130
Di-n-octyl phthalate	3.30	3.43	104	44-137
Benzo(b)fluoranthene	3.30	3.86	117	44-136
Benzo(k)fluoranthene	3.30	2.60	79	43-127
Benzo(a)pyrene	3.30	3.23	98	46-132
Indeno(1,2,3-cd)pyrene	3.30	3.58	108	47-133
Dibenz(a,h)anthracene	3.30	3.60	109	47-129
Benzo(g,h,i)perylene	3.30	3.53	107	40-133

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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SINGLE CONTROL SAMPLE REPORT  
Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits
Category: 8270-IRPSL				
Matrix: SOIL				
QC Lot: 08 SEP 94-11A QC Run: 08 SEP 94-11A				
Concentration Units: mg/kg				
Nitrobenzene-d5	50	49	97	38-116
2-Fluorobiphenyl	50	43	86	42-120
Terphenyl-d14	50	58	117	40-141
Phenol-d5	100	86	86	32-131
2-Fluorophenol	100	93	93	23-184
2,4,6-Tribromophenol	100	59	59	20-109

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Semivolatile Organics by GC/MS

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	8270-IRPMS-L-S	077507-0010-SD	08 SEP 94-11A
MATRIX SPIKE	8270-IRPMS-L-S	077507-0010-MS	08 SEP 94-11A



MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Semivolatile Organics by GC/MS

Analyte	Sample	Concentration			Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup		MS	MSD	MS	MSD	
Test: 8270-IRPMS-L-S									
Matrix SOIL									
Sample: 077507-0010									
Units: mg/kg									
Acenaphthene	ND	2.9	3.2	3.8	3.8	77	86	11	
Acenaphthylene	ND	2.9	3.3	3.8	3.8	77	88	12	
Anthracene	ND	2.9	3.3	3.8	3.8	77	87	12	
Benzo(a)anthracene	ND	2.4	4.6	3.8	3.8	63	121	64	
Benzo(a)pyrene	ND	3.4	3.9	3.8	3.8	91	102	12	
Benzo(b)fluoranthene	ND	3.3	7.3	3.8	3.8	86	194	77	
Benzo(g,h,i)perylene	ND	3.8	4.4	3.8	3.8	101	118	16	
Benzo(k)fluoranthene	ND	3.4	3.3	3.8	3.8	90	87	4	
Benzoic acid	ND	2.9	2.9	7.5	7.5	39	39	0	
Benzyl alcohol	ND	3.9	4.6	3.8	3.8	105	121	15	
4-Bromophenyl									
phenyl ether	ND	3.2	3.7	3.8	3.8	84	99	16	
Butyl benzyl phthalate	ND	4.7	5.5	3.8	3.8	125	145	15	
4-Chloroaniline	ND	1.1	1.1	3.8	3.8	29	29	0	
2,2'-Oxybis(1-chloropropane)	ND	2.8	3.2	3.8	3.8	74	84	12	
bis(2-Chloroethoxy)-									
methane	ND	3.6	3.6	3.8	3.8	96	96	0	
bis(2-Chloroethyl) ether	ND	3.5	3.8	3.8	3.8	93	101	8	
4-Chloro-3-methylphenol	ND	6.6	6.6	7.5	7.5	88	88	0	
2-Chloronaphthalene	ND	3.0	3.3	3.8	3.8	79	88	10	
2-Chlorophenol	ND	5.1	5.7	7.5	7.5	68	76	10	
4-Chlorophenyl									
phenyl ether	ND	2.8	3.1	3.8	3.8	74	82	10	
Chrysene	ND	3.3	3.5	3.8	3.8	87	94	8	
Di-n-butyl phthalate	ND	3.6	4.1	3.8	3.8	97	108	11	
Dibenz(a,h)anthracene	ND	7.1	4.2	3.8	3.8	188	111	51	
Dibenzofuran	ND	3.0	3.4	3.8	3.8	81	91	12	
1,2-Dichlorobenzene	ND	2.6	2.9	3.8	3.8	68	78	13	
1,3-Dichlorobenzene	ND	2.6	3.0	3.8	3.8	70	79	13	
1,4-Dichlorobenzene	ND	2.6	2.9	3.8	3.8	69	77	11	
3,3'-Dichlorobenzidine	ND	3.9	3.0	3.8	3.8	105	80	26	
2,4-Dichlorophenol	ND	5.5	5.5	7.5	7.5	73	73	0	
Diethyl phthalate	ND	3.1	3.4	3.8	3.8	83	90	9	
2,4-Dimethylphenol	ND	6.1	6.1	7.5	7.5	81	81	0	
Dimethyl phthalate	ND	3.3	3.7	3.8	3.8	87	99	13	
4,6-Dinitro-									
2-methylphenol	ND	4.6	5.1	7.5	7.5	61	68	11	
2,4-Dinitrophenol	ND	3.1	4.0	7.5	7.5	42	53	23	
2,4-Dinitrotoluene	ND	3.5	3.9	3.8	3.8	93	105	12	

ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Sample	Concentration		Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup	MS	MSD	MS	MSD	
2,6-Dinitrotoluene	ND	3.4	3.9	3.8	3.8	90	103	13
Di-n-octyl phthalate	ND	3.8	4.1	3.8	3.8	100	109	8
bis(2-Ethylhexyl)-phthalate	ND	4.4	5.1	3.8	3.8	118	136	14
Fluoranthene	ND	3.4	3.8	3.8	3.8	90	101	12
Fluorene	ND	2.9	3.3	3.8	3.8	78	87	11
Hexachlorobenzene	ND	3.1	3.5	3.8	3.8	83	92	11
Hexachlorobutadiene	ND	2.7	2.7	3.8	3.8	71	71	0
Hexachlorocyclopentadiene	ND	2.6	2.6	3.8	3.8	68	68	0
Hexachloroethane	ND	2.8	3.2	3.8	3.8	73	85	15
Indeno(1,2,3-cd)pyrene	ND	3.7	4.4	3.8	3.8	99	117	16
Isophorone	ND	0.68	0.68	3.8	3.8	18	18	0
2-Methylnaphthalene	ND	3.1	3.1	3.8	3.8	83	83	0
2-Methylphenol	ND	5.3	5.8	7.5	7.5	71	77	9
4-Methylphenol	ND	6.7	7.9	7.5	7.5	88	105	17
Naphthalene	ND	2.8	2.8	3.8	3.8	74	74	0
2-Nitroaniline	ND	3.9	4.7	7.5	7.5	52	63	18
3-Nitroaniline	ND	2.9	3.4	7.5	7.5	39	45	14
4-Nitroaniline	ND	3.2	3.7	3.8	3.8	86	99	15
Nitrobenzene	ND	3.3	3.3	3.8	3.8	89	89	0
2-Nitrophenol	ND	5.5	5.5	7.5	7.5	73	73	0
4-Nitrophenol	ND	7.7	8.8	7.5	7.5	102	117	14
N-Nitrosodiphenylamine	ND	3.5	3.9	3.8	3.8	92	103	11
N-Nitroso-di-n-propylamine	ND	3.6	4.0	3.8	3.8	95	105	10
Pentachlorophenol	ND	4.3	5.3	7.5	7.5	57	70	21
Phenanthrene	ND	3.0	3.4	3.8	3.8	80	89	11
Phenol	ND	5.6	5.7	7.5	7.5	74	76	3
Pyrene	ND	4.1	4.4	3.8	3.8	109	118	8
1,2,4-Trichlorobenzene	ND	2.7	2.7	3.8	3.8	73	73	0
2,4,5-Trichlorophenol	ND	4.7	5.0	7.5	7.5	62	67	7
2,4,6-Trichlorophenol	ND	5.7	6.6	7.5	7.5	76	88	14

ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 03070001 (2.00,6.00,)  
Lab ID: 077507-0002-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 29 AUG 94  
Prepared: See Below  
Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8520	mg/kg	53.7	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.1	6010	13 SEP 94	20 SEP 94
Arsenic	2.7	mg/kg	0.50	7060	12 SEP 94	14 SEP 94
Barium	194	mg/kg	10.7	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.54	6010	13 SEP 94	20 SEP 94
Calcium	41400	mg/kg	107	6010	13 SEP 94	20 SEP 94
Chromium	8.7	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Copper	6.2	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Iron	8730	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Lead	6.3	mg/kg	1.0	7421	12 SEP 94	12 SEP 94 R
Magnesium	3440	mg/kg	107	6010	13 SEP 94	20 SEP 94
Manganese	168	mg/kg	2.1	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	10.7	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.1	6010	13 SEP 94	20 SEP 94
Potassium	1610	mg/kg	537	6010	13 SEP 94	20 SEP 94
Selenium	0.79	mg/kg	0.50	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	537	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	14.6	mg/kg	10.7	6010	13 SEP 94	20 SEP 94
Zinc	23.4	mg/kg	2.1	6010	13 SEP 94	20 SEP 94

Percent Moisture is 7%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

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METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 03010001  
Lab ID: 077507-0001-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(2.00,6.00,)

Sampled: 29 AUG 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8030	mg/kg	52.1	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	15.6	6010	13 SEP 94	20 SEP 94
Arsenic	2.5	mg/kg	0.52	7060	12 SEP 94	14 SEP 94
Barium	125	mg/kg	10.4	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.0	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.52	6010	13 SEP 94	20 SEP 94
Calcium	24000	mg/kg	104	6010	13 SEP 94	20 SEP 94
Chromium	8.4	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Copper	6.3	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Iron	8330	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Lead	6.2	mg/kg	0.52	7421	12 SEP 94	12 SEP 94
Magnesium	2910	mg/kg	104	6010	13 SEP 94	20 SEP 94
Manganese	154	mg/kg	2.1	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	10.4	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	15.6	6010	13 SEP 94	20 SEP 94
Potassium	1630	mg/kg	521	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.52	7740	12 SEP 94	15 SEP 94 q
Silver	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	521	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	15.2	mg/kg	10.4	6010	13 SEP 94	20 SEP 94
Zinc	21.3	mg/kg	2.1	6010	13 SEP 94	20 SEP 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

Note q : Post-digestion spike recovery fell between 40% and 85%  
due to matrix interference.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

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METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02310001  
Lab ID: 077507-0005-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(3.00,6.00,)

Sampled: 30 AUG 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8970	mg/kg	52.2	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	15.7	6010	13 SEP 94	20 SEP 94
Arsenic	2.5	mg/kg	0.50	7060	12 SEP 94	14 SEP 94
Barium	163	mg/kg	10.4	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.0	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.52	6010	13 SEP 94	20 SEP 94
Calcium	48000	mg/kg	104	6010	13 SEP 94	20 SEP 94
Chromium	9.2	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Copper	7.4	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Iron	9150	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Lead	6.8	mg/kg	1.0	7421	12 SEP 94	12 SEP 94 R
Magnesium	3860	mg/kg	104	6010	13 SEP 94	20 SEP 94
Manganese	195	mg/kg	2.1	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	10.4	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	15.7	6010	13 SEP 94	20 SEP 94
Potassium	2600	mg/kg	522	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.50	7740	12 SEP 94	16 SEP 94
Silver	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	522	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	15.6	mg/kg	10.4	6010	13 SEP 94	20 SEP 94
Zinc	26.2	mg/kg	2.1	6010	13 SEP 94	20 SEP 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I-179

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02310002  
Lab ID: 077507-0006-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(3.00,6.00,)

Sampled: 30 AUG 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8280	mg/kg	52.4	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	15.7	6010	13 SEP 94	20 SEP 94
Arsenic	2.5	mg/kg	0.50	7060	12 SEP 94	14 SEP 94
Barium	142	mg/kg	10.5	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.0	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.52	6010	13 SEP 94	20 SEP 94
Calcium	42100	mg/kg	105	6010	13 SEP 94	20 SEP 94
Chromium	8.3	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Copper	7.2	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Iron	8620	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Lead	6.9	mg/kg	1.0	7421	12 SEP 94	12 SEP 94 R
Magnesium	3640	mg/kg	105	6010	13 SEP 94	20 SEP 94
Manganese	192	mg/kg	2.1	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	10.5	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	15.7	6010	13 SEP 94	20 SEP 94
Potassium	2390	mg/kg	524	6010	13 SEP 94	20 SEP 94
Selenium	0.69	mg/kg	0.50	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	524	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	15.2	mg/kg	10.5	6010	13 SEP 94	20 SEP 94
Zinc	26.1	mg/kg	2.1	6010	13 SEP 94	20 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I - 178

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02380001  
Lab ID: 077507-0007-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(2.00,4.00,)

Sampled: 31 AUG 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9970	mg/kg	52.4	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	15.7	6010	13 SEP 94	20 SEP 94
Arsenic	3.0	mg/kg	0.50	7060	12 SEP 94	14 SEP 94
Barium	152	mg/kg	10.5	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.0	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.52	6010	13 SEP 94	20 SEP 94
Calcium	47100	mg/kg	105	6010	13 SEP 94	20 SEP 94
Chromium	9.9	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Copper	8.6	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Iron	9720	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Lead	8.4	mg/kg	1.0	7421	12 SEP 94	12 SEP 94 R
Magnesium	4090	mg/kg	105	6010	13 SEP 94	20 SEP 94
Manganese	220	mg/kg	2.1	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	10.5	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	15.7	6010	13 SEP 94	20 SEP 94
Potassium	2910	mg/kg	524	6010	13 SEP 94	20 SEP 94
Selenium	1.2	mg/kg	0.50	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.2	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	524	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	15.7	mg/kg	10.5	6010	13 SEP 94	20 SEP 94
Zinc	29.2	mg/kg	2.1	6010	13 SEP 94	20 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I - 179

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02880001  
Lab ID: 077507-0008-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(3.00,6.00,)

Sampled: 31 AUG 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	5800	mg/kg	59.0	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	17.7	6010	13 SEP 94	20 SEP 94
Arsenic	3.2	mg/kg	0.59	7060	12 SEP 94	14 SEP 94
Barium	187	mg/kg	11.8	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.2	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.59	6010	13 SEP 94	20 SEP 94
Calcium	137000	mg/kg	236	6010	13 SEP 94	20 SEP 94 R
Chromium	6.6	mg/kg	5.9	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.9	6010	13 SEP 94	20 SEP 94
Copper	ND	mg/kg	5.9	6010	13 SEP 94	20 SEP 94
Iron	5280	mg/kg	5.9	6010	13 SEP 94	20 SEP 94
Lead	3.8	mg/kg	0.59	7421	12 SEP 94	12 SEP 94
Magnesium	4300	mg/kg	118	6010	13 SEP 94	20 SEP 94
Manganese	153	mg/kg	2.4	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.12	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.8	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	17.7	6010	13 SEP 94	20 SEP 94
Potassium	1240	mg/kg	590	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.59	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.9	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	590	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	14.4	mg/kg	11.8	6010	13 SEP 94	20 SEP 94
Zinc	12.4	mg/kg	2.4	6010	13 SEP 94	20 SEP 94

Percent Moisture is 15%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I-180



# METALS

Enseco  
Corning Environmental Services

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02920001 (3.00,6.00,)  
Lab ID: 077507-0009-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

Sampled: 31 AUG 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	5840	mg/kg	56.2	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Arsenic	2.2	mg/kg	0.50	7060	12 SEP 94	14 SEP 94
Barium	182	mg/kg	11.2	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.56	6010	13 SEP 94	20 SEP 94
Calcium	87400	mg/kg	112	6010	13 SEP 94	20 SEP 94
Chromium	6.8	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Copper	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Iron	5730	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Lead	3.3	mg/kg	0.50	7421	12 SEP 94	12 SEP 94
Magnesium	3740	mg/kg	112	6010	13 SEP 94	20 SEP 94
Manganese	94.8	mg/kg	2.2	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.2	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Potassium	1210	mg/kg	562	6010	13 SEP 94	20 SEP 94
Selenium	0.61	mg/kg	0.50	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	562	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	14.1	mg/kg	11.2	6010	13 SEP 94	20 SEP 94
Zinc	13.5	mg/kg	2.2	6010	13 SEP 94	20 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I-181

**METALS**

**Enseco**  
Corning Environmental Service

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02540001  
Lab ID: 077507-0010-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(2.50,6.00,)

Sampled: 01 SEP 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	4910	mg/kg	56.5	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Arsenic	3.1	mg/kg	0.50	7060	12 SEP 94	14 SEP 94
Barium	275	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.56	6010	13 SEP 94	20 SEP 94
Calcium	142000	mg/kg	226	6010	13 SEP 94	20 SEP 94 R
Chromium	5.6	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Copper	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Iron	4420	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Lead	3.4	mg/kg	0.50	7421	12 SEP 94	12 SEP 94
Magnesium	3490	mg/kg	113	6010	13 SEP 94	20 SEP 94
Manganese	105	mg/kg	2.3	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Potassium	931	mg/kg	565	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	2.0	7740	10 SEP 94	16 SEP 94 1
Silver	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	565	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	12.1	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Zinc	10.9	mg/kg	2.3	6010	13 SEP 94	20 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I-182

**METALS**

**Enseco**  
Corning Environmental Services

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02550001  
Lab ID: 077507-0011-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(2.50,6:00,)

Sampled: 01 SEP 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	7270	mg/kg	55.4	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.6	6010	13 SEP 94	20 SEP 94
Arsenic	2.2	mg/kg	0.50	7060	12 SEP 94	14 SEP 94
Barium	111	mg/kg	11.1	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.55	6010	13 SEP 94	20 SEP 94
Calcium	39900	mg/kg	111	6010	13 SEP 94	20 SEP 94
Chromium	7.7	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Copper	6.4	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Iron	7300	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Lead	5.5	mg/kg	0.50	7421	12 SEP 94	12 SEP 94
Magnesium	2980	mg/kg	111	6010	13 SEP 94	20 SEP 94
Manganese	145	mg/kg	2.2	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.1	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.6	6010	13 SEP 94	20 SEP 94
Potassium	1940	mg/kg	554	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.50	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	554	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	12.2	mg/kg	11.1	6010	13 SEP 94	20 SEP 94
Zinc	20.1	mg/kg	2.2	6010	13 SEP 94	20 SEP 94

Percent Moisture is 10%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I - 183

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02580001 (2.50, 6.00,)  
Lab ID: 077507-0012-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

Sampled: 01 SEP 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	12500	mg/kg	56.0	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.8	6010	13 SEP 94	20 SEP 94
Arsenic	2.2	mg/kg	1.0	7060	12 SEP 94	14 SEP 94 1
Barium	118	mg/kg	11.2	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.56	6010	13 SEP 94	20 SEP 94
Calcium	24000	mg/kg	112	6010	13 SEP 94	20 SEP 94
Chromium	7.9	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Copper	7.9	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Iron	8640	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Lead	6.7	mg/kg	0.50	7421	12 SEP 94	12 SEP 94
Magnesium	3050	mg/kg	112	6010	13 SEP 94	20 SEP 94
Manganese	184	mg/kg	2.2	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.10	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.2	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.8	6010	13 SEP 94	20 SEP 94
Potassium	2290	mg/kg	560	6010	13 SEP 94	20 SEP 94
Selenium	1.1	mg/kg	0.50	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	560	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	13.3	mg/kg	11.2	6010	13 SEP 94	20 SEP 94
Zinc	26.1	mg/kg	2.2	6010	13 SEP 94	20 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I - 184

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02470001  
Lab ID: 077507-0013-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(1.50,3.00,)

Sampled: 02 SEP 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9800	mg/kg	56.4	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Arsenic	2.6	mg/kg	2.3	7060	12 SEP 94	21 SEP 94 1
Barium	136	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.56	6010	13 SEP 94	20 SEP 94
Calcium	27300	mg/kg	113	6010	13 SEP 94	20 SEP 94
Chromium	9.8	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Copper	9.2	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Iron	10300	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Lead	9.4	mg/kg	1.1	7421	12 SEP 94	12 SEP 94 R
Magnesium	4030	mg/kg	113	6010	13 SEP 94	20 SEP 94
Manganese	231	mg/kg	2.3	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.11	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Potassium	2810	mg/kg	564	6010	13 SEP 94	20 SEP 94
Selenium	2.0	mg/kg	0.56	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	564	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	16.4	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Zinc	31.1	mg/kg	2.3	6010	13 SEP 94	20 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I-185

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02460001  
Lab ID: 077507-0014-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(2.50,6.00,)

Sampled: 02 SEP 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	5490	mg/kg	55.0	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.5	6010	13 SEP 94	20 SEP 94
Arsenic	2.8	mg/kg	0.55	7060	12 SEP 94	14 SEP 94
Barium	154	mg/kg	11.0	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.55	6010	13 SEP 94	20 SEP 94
Calcium	90700	mg/kg	110	6010	13 SEP 94	20 SEP 94
Chromium	ND	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Copper	5.7	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Iron	5550	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Lead	4.3	mg/kg	0.55	7421	12 SEP 94	12 SEP 94
Magnesium	3010	mg/kg	110	6010	13 SEP 94	20 SEP 94
Manganese	96.6	mg/kg	2.2	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.11	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.0	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.5	6010	13 SEP 94	20 SEP 94
Potassium	1210	mg/kg	550	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.55	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.5	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	550	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	12.2	mg/kg	11.0	6010	13 SEP 94	20 SEP 94
Zinc	14.9	mg/kg	2.2	6010	13 SEP 94	20 SEP 94

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

T-126

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02480001 (3.00, 5.50,)  
Lab ID: 077507-0015-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 02 SEP 94  
Prepared: See Below  
Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	9100	mg/kg	53.8	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.1	6010	13 SEP 94	20 SEP 94
Arsenic	2.8	mg/kg	1.1	7060	12 SEP 94	14 SEP 94 1
Barium	145	mg/kg	10.8	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.54	6010	13 SEP 94	20 SEP 94
Calcium	35400	mg/kg	108	6010	13 SEP 94	20 SEP 94
Chromium	8.8	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Copper	7.5	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Iron	9230	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Lead	7.3	mg/kg	1.1	7421	12 SEP 94	12 SEP 94 R
Magnesium	3790	mg/kg	108	6010	13 SEP 94	20 SEP 94
Manganese	196	mg/kg	2.2	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.11	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	10.8	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.1	6010	13 SEP 94	20 SEP 94
Potassium	2590	mg/kg	538	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.54	7740	12 SEP 94	16 SEP 94
Silver	ND	mg/kg	5.4	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	538	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	12 SEP 94	20 SEP 94
Vanadium	15.1	mg/kg	10.8	6010	13 SEP 94	20 SEP 94
Zinc	28.1	mg/kg	2.2	6010	13 SEP 94	20 SEP 94

Percent Moisture is 7%. All results and limits are reported on a dry weight basis.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

J-187

METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02490001  
Lab ID: 077507-0017-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(3.00,6.00,)

Sampled: 02 SEP 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	5240	mg/kg	55.5	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.7	6010	13 SEP 94	20 SEP 94
Arsenic	1.6	mg/kg	1.1	7060	12 SEP 94	14 SEP 94 1
Barium	104	mg/kg	11.1	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.56	6010	13 SEP 94	20 SEP 94
Calcium	33000	mg/kg	111	6010	13 SEP 94	20 SEP 94
Chromium	6.6	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Copper	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Iron	6070	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Lead	5.7	mg/kg	0.56	7421	12 SEP 94	12 SEP 94
Magnesium	2750	mg/kg	111	6010	13 SEP 94	20 SEP 94
Manganese	132	mg/kg	2.2	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.11	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.1	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.7	6010	13 SEP 94	20 SEP 94
Potassium	1450	mg/kg	555	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.56	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	555	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	13.9	mg/kg	11.1	6010	13 SEP 94	20 SEP 94
Zinc	17.4	mg/kg	2.2	6010	13 SEP 94	20 SEP 94

Percent Moisture is 10%. All results and limits are reported on a dry weight basis.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

J-188



METALS

(Soil/Solid - Total)

Client Name: Gram, Inc.  
Client ID: 02500001  
Lab ID: 077507-0016-SA  
Matrix: SOIL  
Authorized: 03 SEP 94

(1.50, 2.50,)

Sampled: 02 SEP 94  
Prepared: See Below

Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	8170	mg/kg	56.4	6010	13 SEP 94	20 SEP 94
Antimony	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Arsenic	1.4	mg/kg	0.56	7060	12 SEP 94	14 SEP 94
Barium	111	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Beryllium	ND	mg/kg	1.1	6010	13 SEP 94	20 SEP 94
Cadmium	ND	mg/kg	0.56	6010	13 SEP 94	20 SEP 94
Calcium	18100	mg/kg	113	6010	13 SEP 94	20 SEP 94
Chromium	8.5	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Cobalt	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Copper	8.3	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Iron	8700	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Lead	5.8	mg/kg	2.8	7421	12 SEP 94	12 SEP 94 1
Magnesium	3610	mg/kg	113	6010	13 SEP 94	20 SEP 94
Manganese	215	mg/kg	2.3	6010	13 SEP 94	20 SEP 94
Mercury	ND	mg/kg	0.11	7471	12 SEP 94	13 SEP 94
Molybdenum	ND	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Nickel	ND	mg/kg	16.9	6010	13 SEP 94	20 SEP 94
Potassium	2820	mg/kg	564	6010	13 SEP 94	20 SEP 94
Selenium	ND	mg/kg	0.56	7740	12 SEP 94	13 SEP 94
Silver	ND	mg/kg	5.6	6010	13 SEP 94	20 SEP 94
Sodium	ND	mg/kg	564	6010	13 SEP 94	20 SEP 94
Thallium	ND	mg/kg	0.50	7841	10 SEP 94	20 SEP 94
Vanadium	13.5	mg/kg	11.3	6010	13 SEP 94	20 SEP 94
Zinc	38.3	mg/kg	2.3	6010	13 SEP 94	20 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

QC LOT ASSIGNMENT REPORT  
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077507-0001-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0001-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0001-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0001-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0001-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0001-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0002-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0002-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0002-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0002-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0002-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0002-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0002-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0005-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0005-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0005-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0005-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0005-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0006-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0006-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0006-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0006-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0006-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0006-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0007-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0007-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0007-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0007-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0007-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0007-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0008-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0008-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0008-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0008-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0008-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0008-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0009-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0009-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0009-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0009-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0009-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0009-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0010-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0010-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0010-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0010-SA	SOIL	7740-IRP-S	10 SEP 94-BX	10 SEP 94-BX
077507-0010-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A

QC LOT ASSIGNMENT REPORT  
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077507-0001-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0001-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0002-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0002-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0005-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0005-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0006-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0006-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0007-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0007-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0008-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0008-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0009-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0009-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0010-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0010-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0010-MS	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0010-MS	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0010-SD	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0010-SD	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0011-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0011-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A
077507-0012-SA	SOIL	NO3&NO2-S	16 SEP 94-B	16 SEP 94-B
077507-0012-SA	SOIL	CN-IRP-S	12 SEP 94-A	12 SEP 94-A

METHOD BLANK REPORT  
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: NO3&NO2-S Matrix: SOIL QC Lot: 16 SEP 94-B QC Run: 16 SEP 94-B			
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 12 SEP 94-A QC Run: 12 SEP 94-A			
Cyanide, Total	ND	mg/kg	0.50
Test: NO3&NO2-S Matrix: SOIL QC Lot: 16 SEP 94-B QC Run: 16 SEP 94-B			
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 12 SEP 94-A QC Run: 12 SEP 94-A			
Cyanide, Total	ND	mg/kg	0.50
Test: NO3&NO2-S Matrix: SOIL QC Lot: 16 SEP 94-B QC Run: 16 SEP 94-B			
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 12 SEP 94-A QC Run: 12 SEP 94-A			
Cyanide, Total	ND	mg/kg	0.50

LABORATORY CONTROL SAMPLE REPORT  
 Wet Chemistry Analysis and Preparation

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: NO3&NO2-S Nitrate plus nitrite for soil/solid/waste matrices.				
Matrix: SOIL				
QC Lot: 16 SEP 94-B QC Run: 16 SEP 94-B				
Concentration Units: mg/kg				
Nitrate + Nitrite (as N)	12.5	12.1	97	75-125

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: CN-IRP-S Cyanide				
Matrix: SOIL				
QC Lot: 12 SEP 94-A QC Run: 12 SEP 94-A				
Concentration Units: mg/kg				
Cyanide, Total	5.00	5.55	111	77-115

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Wet Chemistry Analysis and Preparation

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	NO3&NO2-S	077507-0010-SD	16 SEP 94-B
MATRIX SPIKE	NO3&NO2-S	077507-0010-MS	16 SEP 94-B
MATRIX SPIKE DUPLICATE	CN-9012-IRP-KAFB-S	077507-0010-SD	12 SEP 94-A
MATRIX SPIKE	CN-9012-IRP-KAFB-S	077507-0010-MS	12 SEP 94-A

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QC LOT ASSIGNMENT REPORT  
 Metals Analysis and Preparation (cont.)

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077507-0010-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0010-MS	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0010-MS	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0010-MS	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0010-MS	SOIL	7740-IRP-S	10 SEP 94-BX	10 SEP 94-BX
077507-0010-MS	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0010-MS	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0010-SD	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0010-SD	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0010-SD	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0010-SD	SOIL	7740-IRP-S	10 SEP 94-BX	10 SEP 94-BX
077507-0010-SD	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0010-SD	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0010-SD	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0011-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0011-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0011-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0011-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0011-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0012-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0012-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0012-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0012-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0012-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0012-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0012-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0013-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0013-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0013-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0013-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0013-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0013-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0014-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0014-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0014-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0014-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0014-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0014-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0015-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0015-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0015-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0015-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0015-SA	SOIL	7841-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0015-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0016-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0016-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0016-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX

QC LOT ASSIGNMENT REPORT  
Metals Analysis and Preparation (cont.)

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077507-0016-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0016-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B
077507-0017-SA	SOIL	7471-IRP-S	12 SEP 94-E	12 SEP 94-E
077507-0017-SA	SOIL	7421-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0017-SA	SOIL	7060-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0017-SA	SOIL	7740-IRP-S	12 SEP 94-DX	12 SEP 94-DX
077507-0017-SA	SOIL	ICP-IRP-S	13 SEP 94-A	13 SEP 94-A
077507-0017-SA	SOIL	7841-IRP-S	10 SEP 94-B	10 SEP 94-B



METHOD BLANK REPORT  
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: HG-CVAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-E QC Run: 12 SEP 94-E			
Mercury	ND	mg/kg	0.10
Test: PB-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Lead	ND	mg/kg	0.50
Test: AS-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Arsenic	ND	mg/kg	0.50
Test: SE-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Selenium	ND	mg/kg	0.50
Test: ICP-IRPMS-S			
Matrix: SOIL			
QC Lot: 13 SEP 94-A QC Run: 13 SEP 94-A			
Aluminum	ND	mg/kg	50.0
Antimony	ND	mg/kg	15.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	1.0
Cadmium	ND	mg/kg	0.50
Calcium	ND	mg/kg	100
Chromium	ND	mg/kg	5.0
Cobalt	ND	mg/kg	5.0
Copper	ND	mg/kg	5.0
Iron	ND	mg/kg	5.0
Magnesium	ND	mg/kg	100
Manganese	ND	mg/kg	2.0
Molybdenum	ND	mg/kg	10.0

METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-IRPMS-S			
Matrix: SOIL			
QC Lot: 13 SEP 94-A QC Run: 13 SEP 94-A			
Nickel	ND	mg/kg	15.0
Potassium	ND	mg/kg	500
Silver	ND	mg/kg	5.0
Sodium	ND	mg/kg	500
Vanadium	ND	mg/kg	10.0
Zinc	ND	mg/kg	2.0
Test: TL-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 10 SEP 94-B QC Run: 10 SEP 94-B			
Thallium	ND	mg/kg	0.50
Test: HG-CVAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-E QC Run: 12 SEP 94-E			
Mercury	ND	mg/kg	0.10
Test: PB-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Lead	ND	mg/kg	0.50
Test: AS-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Arsenic	ND	mg/kg	0.50

METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: SE-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Selenium	ND	mg/kg	0.50

Test: ICP-IRPMS-S  
Matrix: SOIL  
QC Lot: 13 SEP 94-A QC Run: 13 SEP 94-A

Aluminum	ND	mg/kg	50.0
Antimony	ND	mg/kg	15.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	1.0
Cadmium	ND	mg/kg	0.50
Calcium	ND	mg/kg	100
Chromium	ND	mg/kg	5.0
Cobalt	ND	mg/kg	5.0
Copper	ND	mg/kg	5.0
Iron	ND	mg/kg	5.0
Magnesium	ND	mg/kg	100
Manganese	ND	mg/kg	2.0
Molybdenum	ND	mg/kg	10.0
Nickel	ND	mg/kg	15.0
Potassium	ND	mg/kg	500
Silver	ND	mg/kg	5.0
Sodium	ND	mg/kg	500
Vanadium	ND	mg/kg	10.0
Zinc	ND	mg/kg	2.0

Test: TL-FAA-IRP-S  
Matrix: SOIL  
QC Lot: 10 SEP 94-B QC Run: 10 SEP 94-B

Thallium	ND	mg/kg	0.50
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METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 10 SEP 94-BX QC Run: 10 SEP 94-BX			
Selenium	ND	mg/kg	0.50
Test: HG-CVAA-IRP-S Matrix: SOIL QC Lot: 12 SEP 94-E QC Run: 12 SEP 94-E			
Mercury	ND	mg/kg	0.10
Test: PB-FAA-IRP-S Matrix: SOIL QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Lead	ND	mg/kg	0.50
Test: AS-FAA-IRP-S Matrix: SOIL QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Arsenic	ND	mg/kg	0.50
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 10 SEP 94-BX QC Run: 10 SEP 94-BX			
Selenium	ND	mg/kg	0.50
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 13 SEP 94-A QC Run: 13 SEP 94-A			
Aluminum	ND	mg/kg	50.0
Antimony	ND	mg/kg	15.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	1.0
Cadmium	ND	mg/kg	0.50
Calcium	ND	mg/kg	100

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METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: ICP-IRPMS-S			
Matrix: SOIL			
QC Lot: 13 SEP 94-A QC Run: 13 SEP 94-A			
Chromium	ND	mg/kg	5.0
Cobalt	ND	mg/kg	5.0
Copper	ND	mg/kg	5.0
Iron	ND	mg/kg	5.0
Magnesium	ND	mg/kg	100
Manganese	ND	mg/kg	2.0
Molybdenum	ND	mg/kg	10.0
Nickel	ND	mg/kg	15.0
Potassium	ND	mg/kg	500
Silver	ND	mg/kg	5.0
Sodium	ND	mg/kg	500
Vanadium	ND	mg/kg	10.0
Zinc	ND	mg/kg	2.0

Test: TL-FAA-IRP-S  
Matrix: SOIL  
QC Lot: 10 SEP 94-B QC Run: 10 SEP 94-B

Thallium	ND	mg/kg	0.50
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Test: HG-CVAA-IRP-S  
Matrix: SOIL  
QC Lot: 12 SEP 94-E QC Run: 12 SEP 94-E

Mercury	ND	mg/kg	0.10
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Test: PB-FAA-IRP-S  
Matrix: SOIL  
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX

Lead	ND	mg/kg	0.50
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I-201

METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: AS-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Arsenic	ND	mg/kg	0.50
Test: SE-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Selenium	ND	mg/kg	0.50
Test: ICP-IRPMS-S			
Matrix: SOIL			
QC Lot: 13 SEP 94-A QC Run: 13 SEP 94-A			
Aluminum	ND	mg/kg	50.0
Antimony	ND	mg/kg	15.0
Barium	ND	mg/kg	10.0
Beryllium	ND	mg/kg	1.0
Cadmium	ND	mg/kg	0.50
Calcium	ND	mg/kg	100
Chromium	ND	mg/kg	5.0
Cobalt	ND	mg/kg	5.0
Copper	ND	mg/kg	5.0
Iron	ND	mg/kg	100
Magnesium	ND	mg/kg	2.0
Manganese	ND	mg/kg	10.0
Molybdenum	ND	mg/kg	15.0
Nickel	ND	mg/kg	500
Potassium	ND	mg/kg	5.0
Silver	ND	mg/kg	500
Sodium	ND	mg/kg	10.0
Vanadium	ND	mg/kg	2.0
Zinc	ND	mg/kg	

I-202

METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: TL-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 10 SEP 94-B QC Run: 10 SEP 94-B			
Thallium	ND	mg/kg	0.50
Test: TL-FAA-IRP-S			
Matrix: SOIL			
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX			
Thallium	ND	mg/kg	0.50

I-203

LABORATORY CONTROL SAMPLE REPORT  
Metals Analysis and Preparation

Analyte	Concentration Spiked Measured	Accuracy(%) LCS Limits
Category: 7471-IRP-S Mercury by CVAA STATIC QC LIMITS - DO NOT UPDATE		
Matrix: SOIL		
QC Lot: 12 SEP 94-E QC Run: 12 SEP 94-E		
Concentration Units: mg/kg		
Mercury	32.0 27.0	84 75-125

Analyte	Concentration Spiked Measured	Accuracy(%) LCS Limits
Category: 7421-IRP-S Lead, Furnace AA STATIC QC LIMITS - DO NOT UPDATE		
Matrix: SOIL		
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX		
Concentration Units: mg/kg		
Lead	50.9 50.1	98 65-135

Analyte	Concentration Spiked Measured	Accuracy(%) LCS Limits
Category: 7060-IRP-S Arsenic, Furnace AA STATIC QC LIMITS - DO NOT UPDATE		
Matrix: SOIL		
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX		
Concentration Units: mg/kg		
Arsenic	72.1 59.7	83 75-125

Analyte	Concentration Spiked Measured	Accuracy(%) LCS Limits
Category: 7740-IRP-S Selenium, Furnace AA STATIC QC LIMITS - DO NOT UPDATE		
Matrix: SOIL		
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX		
Concentration Units: mg/kg		
Selenium	74.2 85.0	115 70-130

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results

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LABORATORY CONTROL SAMPLE REPORT  
Metals Analysis and Preparation

(cont.)

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7740-IRP-S Selenium, Furnace AA STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 10 SEP 94-BX QC Run: 10 SEP 94-BX				
Concentration Units: mg/kg				
Selenium	74.2	63.0	85	70-130

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: ICP-IRP-S ICP Metals STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 13 SEP 94-A QC Run: 13 SEP 94-A				
Concentration Units: mg/kg				
Aluminum	3650	3070	84	75-140
Antimony	75.0	68.0	91	50-150
Arsenic	72.1	72.5	101	75-125
Barium	64.8	64.6	100	75-125
Beryllium	26.7	28.3	106	75-125
Calcium	2330	2370	102	75-125
Cadmium	61.6	61.5	100	75-125
Chromium	44.1	44.3	100	75-125
Copper	78.1	79.1	101	75-125
Cobalt	177	187	106	75-125
Iron	7360	6180	84	75-125
Magnesium	2550	2550	100	75-125
Manganese	141	137	97	75-125
Molybdenum	104	106	102	75-125
Potassium	3310	3420	103	75-125
Lead	50.9	53.9	106	75-125
Nickel	110	116	106	75-125
Selenium	74.2	88.3	119	60-140
Silver	71.7	70.7	99	75-125
Sodium	346	329	95	75-125
Thallium	64.1	62.0	97	75-125
Vanadium	83.0	78.7	95	75-125
Zinc	78.2	78.1	100	75-125

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results

I-205

LABORATORY CONTROL SAMPLE REPORT  
Metals Analysis and Preparation

(cont.)

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7841-IRP-S Thallium, Furnace AA				
STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 10 SEP 94-B QC Run: 10 SEP 94-B				
Concentration Units: mg/kg				
Thallium	64.1	51.3	80	65-135

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7841-IRP-S Thallium, Furnace AA				
STATIC QC LIMITS - DO NOT UPDATE				
Matrix: SOIL				
QC Lot: 12 SEP 94-DX QC Run: 12 SEP 94-DX				
Concentration Units: mg/kg				
Thallium	64.1	51.3	80	65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPECIFIC QC  
ASSIGNMENT REPORT  
Metals Analysis and Preparation

QC SAMPLE TYPE	TEST	LABORATORY SAMPLE NUMBER	QC LOT
MATRIX SPIKE DUPLICATE	HG-CVAA-IRP-S	077507-0010-SD	12 SEP 94-E
MATRIX SPIKE	HG-CVAA-IRP-S	077507-0010-MS	12 SEP 94-E
MATRIX SPIKE DUPLICATE	PB-FAA-IRP-S	077507-0010-SD	12 SEP 94-DX
MATRIX SPIKE	PB-FAA-IRP-S	077507-0010-MS	12 SEP 94-DX
MATRIX SPIKE DUPLICATE	AS-FAA-IRP-S	077507-0010-SD	12 SEP 94-DX
MATRIX SPIKE	AS-FAA-IRP-S	077507-0010-MS	12 SEP 94-DX
MATRIX SPIKE DUPLICATE	SE-FAA-IRP-S	077507-0010-SD	10 SEP 94-B
MATRIX SPIKE	SE-FAA-IRP-S	077507-0010-MS	10 SEP 94-B
MATRIX SPIKE DUPLICATE	ICP-IRPMS-S	077507-0010-SD	13 SEP 94-A
MATRIX SPIKE	ICP-IRPMS-S	077507-0010-MS	13 SEP 94-A
MATRIX SPIKE DUPLICATE	TL-FAA-IRP-S	077507-0010-SD	-
MATRIX SPIKE	TL-FAA-IRP-S	077507-0010-MS	-

MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Metals Analysis and Preparation

Analyte	Sample	Concentration			Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup	MS	MSD	MS	MSD		
Test: HG-CVAA-IRP-S Matrix SOIL Sample: 077507-0010 Units: mg/kg									
Mercury	ND	0.26	0.25	0.28	0.28	94	90	4	
Test: PB-FAA-IRP-S Matrix SOIL Sample: 077507-0010 Units: mg/kg									
Lead	3.4	5.8	5.6	2.3	2.3	106	100	6	
Test: AS-FAA-IRP-S Matrix SOIL Sample: 077507-0010 Units: mg/kg									
Arsenic	3.1	7.2	7.5	4.5	4.5	91	97	7	
Test: SE-FAA-IRP-S Matrix SOIL Sample: 077507-0010 Units: mg/kg									
Selenium	ND	2.7	2.9	2.3	2.3	118	128	9	
Test: ICP-IRPMS-S Matrix SOIL Sample: 077507-0010 Units: mg/kg									
Aluminum	4910	7570	8060	226	226	1178	1395	17	
Antimony	ND	30.5	30.5	56.5	56.5	54	54	0	
Barium	275	441	488	226	226	73	94	25	
Beryllium	ND	5.3	5.5	5.6	5.6	94	97	3	
Cadmium	ND	4.5	4.7	5.6	5.6	80	84	5	
Calcium	142000	141000	146000	11300	11300	NC	37	NC	
Chromium	5.6	25.5	25.8	22.6	22.6	88	89	2	

ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Sample	Concentration		Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike Dup	MS	MSD	MS	MSD	
Cobalt	ND	47.3	49.9	56.5	56.5	84	88	5
Copper	ND	27.4	28.0	28.2	28.2	97	99	2
Iron	4420	4990	5300	113	113	504	782	43
Magnesium	3490	8570	8720	5650	5650	90	93	3
Manganese	105	166	147	56.5	56.5	108	74	37
Molybdenum	ND	18.4	19.3	22.6	22.6	81	86	5
Nickel	ND	49.9	51.9	56.5	56.5	88	92	4
Potassium	931	6380	6620	5650	5650	97	101	4
Silver	ND	5.0	5.0	5.6	5.6	89	89	0
Sodium	ND	10200	10500	11300	11300	90	93	3
Vanadium	12.1	61.0	62.9	56.5	56.5	86	90	4
Zinc	10.9	57.2	59.6	56.5	56.5	82	86	5

Test: TL-FAA-IRP-S  
Matrix SOIL  
Sample: 077507-0010  
Units: mg/kg

Thallium	ND	4.1	3.8	5.0	5.0	81	77	6
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ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

I-210

## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.  
Client ID: 03010001 (2.00,6.00,)  
Lab ID: 077507-0001-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 29 AUG 94  
Prepared: See Below  
Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.52	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	2.3	mg/kg	0.26	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
Rev 230787

I. 211

GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 03070001 (2.00,6.00,)

Lab ID: 077507-0002-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 29 AUG 94

Prepared: See Below

Received: 03 SEP 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.54	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	46.8	mg/kg	2.7	353.2 Modified	16 SEP 94	16 SEP 94 R

Percent Moisture is 7%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

I-012



## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.  
Client ID: 02310001 (3.00,6.00,)  
Lab ID: 077507-0005-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 30 AUG 94  
Prepared: See Below  
Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.52	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	5.5	mg/kg	2.6	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
Rev 230787

I-213

GENERAL INORGANICS

(Soil/Solid)

Enseco  
Corning Environmental Service

Client Name: Gram, Inc.

Client ID: 02310002 (3.00,6.00,)

Lab ID: 077507-0006-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 30 AUG 94

Prepared: See Below

Received: 03 SEP 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.52	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	5.4	mg/kg	2.6	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

I-214

## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 02380001 (2.00,4.00,)

Lab ID: 077507-0007-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 31 AUG 94

Prepared: See Below

Received: 03 SEP 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.52	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	23.1	mg/kg	1.3	353.2 Modified	16 SEP 94	16 SEP 94 R

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

T-215

## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 02880001 (3.00,6.00,)

Lab ID: 077507-0008-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 31 AUG 94

Prepared: See Below

Received: 03 SEP 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.59	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	2.6	mg/kg	0.30	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 15%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

I-216

## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 02920001 (3.00,6.00,)

Lab ID: 077507-0009-SA

Matrix: SOIL

Sampled: 31 AUG 94

Received: 03 SEP 94

Authorized: 03 SEP 94

Prepared: See Below

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.56	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	3.8	mg/kg	0.28	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 02540001 (2.50,6.00,)

Lab ID: 077507-0010-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 01 SEP 94

Prepared: See Below

Received: 03 SEP 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.56	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	386	mg/kg	14.1	353.2 Modified	16 SEP 94	16 SEP 94 R

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

I-318

## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 02580001 (2.50,6.00,)

Lab ID: 077507-0012-SA

Matrix: SOIL

Authorized: 03 SEP 94

Sampled: 01 SEP 94

Prepared: See Below

Received: 03 SEP 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.56	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	1.3	mg/kg	0.28	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 11%. All results and limits are reported on a dry weight basis.

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

J. D. 2/9

## GENERAL INORGANICS

Enseco  
Corning Environmental Service

(Soil/Solid)

Client Name: Gram, Inc.  
Client ID: 02550001 (2.50,6.00,)  
Lab ID: 077507-0011-SA  
Matrix: SOIL  
Authorized: 03 SEP 94  
Sampled: 01 SEP 94  
Prepared: See Below  
Received: 03 SEP 94  
Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.55	9012 Modified	12 SEP 94	12 SEP 94
Nitrate + Nitrite (as N)	9.9	mg/kg	0.28	353.2 Modified	16 SEP 94	16 SEP 94

Percent Moisture is 10%. All results and limits are reported on a dry weight basis.

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
Rev 230787

I - 020



MATRIX SPIKE / MATRIX SPIKE DUPLICATE REPORT  
Wet Chemistry Analysis and Preparation

Analyte	Sample	Concentration			Spiked		%Recovery		% RPD
		Matrix Spike	Matrix Spike	Matrix Dup	MS	MSD	MS	MSD	
Test: NO3&NO2-S									
Matrix SOIL									
Sample: 077507-0010									
Units: mg/kg									
Nitrate + Nitrite (as N)	386	373	370	2.8	2.8	NC	NC	NC	

Test: CN-9012-IRP-KAFB-S  
Matrix SOIL  
Sample: 077507-0010  
Units: mg/kg

Cyanide, Total	ND	5.5	5.7		5.6	5.6	98	102	4
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ND = Not detected.

NC = Not calculated, calculation not applicable.

All results and spike amounts are reported on a dry weight basis.

All calculations are performed before rounding to avoid round-off errors in calculated results.

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**Quanterra West Sacramento**  
*Environmental Services*

**MEMORANDUM**

DATE: October 5, 1994 3:48pm  
TO: Jeff Johnson  
FROM: Joe Schairer  
RE: 077541

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Jeff:

Here is the amended case narrative for Quanterra project 077541, which was forwarded to you on 28 September 1994. Also included are the Semivolatile Organics Library Search results.

Please remove the original case narrative from the report and replace it with the attached version. Insert the Library Search data sheets behind their respective sample data sheets.

If I can answer any questions, please call.

Thank you,

Joe

I-203



**Enseco**  
A Corning Company

September 28, 1994  
QUANTERRA PROJECT NUMBER: 077541  
PO/CONTRACT: Jeff Johnson

Jeff Johnson  
Gram, Inc.  
8500 Menaul Blvd. NE, #B-370  
Albuquerque, NM 87112

Dear Mr. Johnson:

This report contains the analytical results for the five aqueous samples which were received under chain of custody by Quanterra West Sacramento on 08 September 1994. These samples are associated with your McCormick Ranch, Kirtland AFB project.

The case narrative is an integral part of this report.

If you have any questions, please call me at (916) 374-4362.

Sincerely,

Diana L. Brooks  
Project Manager

jas

Enseco - CAL  
2544 Industrial Blvd.  
West Sacramento, CA 95691-3435  
(916) 372-1393  
FAX: (916) 372-7700

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## CASE NARRATIVE

### QUANTERRA PROJECT NUMBER 077541

#### General Comments

Only one cooler was received with a temperature blank. The temperature of this blank was recorded at 4.9 degrees Centigrade. The ambient temperatures in the three coolers which samples were received in was recorded as 5.6 degrees Centigrade, 6.4 degrees Centigrade and 6.6 degrees Centigrade.

The pH of the sample in all preserved containers was checked upon receipt and found to be acceptable.

#### Specialty Explosives by HPLC/MS - Method 8321

The laboratory control sample (LCS) recovered nitroglycerin and PETN above the listed control limits. Presently, the laboratory has not generated enough LCS recovery data to calculate historical limits. Therefore, the control limits used have been designated advisory only. The elevated recoveries in the LCS provide confidence in the analysis ability to detect target analytes at the listed reporting level. Since the samples did not have positive detections of target analytes, the data was accepted.

#### Semivolatile Organics - Method 8270

The reported duplicate laboratory control sample (DCS) has five compounds with an average recovery above the listed control limits. All of the samples in this project did not have detections of target analytes. The high recoveries in the DCS provide confidence in the analyses ability to detect target analytes at a concentration above the reporting limit.

The sample group was extracted and analyzed with a DCS, as opposed to a MS/SD/LCS, due to limited sample volume.

Due to electronic data deliverable limitations, library search results are available in hardcopy format only.

Amended

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Amended

Enseco  
Corning Environmental Services

**CASE NARRATIVE (continued)**

**QUANTERRA PROJECT NUMBER 077541**

**Selected Metals - Various Methods**

Analysis for Thallium was performed by Graphite Furnace in order to achieve detection levels required by the QAPJP.

No other anomalies were associated with this report.

Amended

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## QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documental quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

### Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

**Duplicate Control Samples.** A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

**Single Control Samples.** An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

**Method Blank Results.** A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

SAMPLE DESCRIPTION INFORMATION  
for  
Gram, Inc.

Lab ID	Client ID		Matrix	Sampled Date	Time	Received Date
077541-0001-SA	01661001	{0.00,0.00,}	AQUEOUS	07 SEP 94	10:30	08 SEP 94
077541-0002-SA	02461001	{0.00,0.00,}	AQUEOUS	07 SEP 94	10:30	08 SEP 94
077541-0003-SA	02462001	{0.00,0.00,}	AQUEOUS	07 SEP 94	10:30	08 SEP 94
077541-0004-SA	02471001	{0.00,0.00,}	AQUEOUS	07 SEP 94	10:30	08 SEP 94
077541-0005-SA	02481001	{0.00,0.00,}	AQUEOUS	07 SEP 94	10:30	08 SEP 94

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# CHAIN OF CUSTODY

NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

PROJECT NAME:	MCCORMICK RANCH		# OF CONTAINERS *		2		1		1		1		1		1	
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB		TYPE OF CONTAINERS		AG		P		AG		P		P		P	
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282		CONTAINER VOLUME		1000 ml		500 ml		1000 ml		250 ml		1000 ml		500 ml	
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439		PRESERVATIVE		4°C		4°C		4°C		4°C		4°C		4°C	
LABORATORY CONTACT:			ANALYSES REQUESTED		1		2		3		4		5		6	

SAMPLE IDENTIFICATION		DATE/TIME		COLLECTED	
(SITE ID, LOCATION ID, SAMPLE ID)	MATRIX				
KRTL154 - 0166-1001	W	9/1/94	1030	✓	✓
KRTL154 - 0246-1001	W	9/1/94	1030	✓	✓
KRTL154 - 0246-2001	W	9/1/94	1030	✓	✓
KRTL154 - 0247-1001	W	9/1/94	1030	✓	✓
KRTL154 - 0248-1001	W	9/1/94	1030	✓	✓
KRTL154 -					
KRTL154 -					
KRTL154 -					
KRTL154 -					
KRTL154 -					
KRTL154 -					

**LABORATORY ANALYSES:**

- EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)
- NITRATE + NITRITE (E353.2)
- SEMI-VOCs (SW8270)
- ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY (SW7471)
- MERCURY (SW7471)
- LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740)
- CYANIDE (SW9012)

**CONTAINER TYPES:**

- P - POLYETHYLENE
- CG - CLEAR GLASS
- AG - AMBER GLASS

\*NOTE: FOR SOIL SAMPLES ONLY ONE 16-oz GLASS JAR OF SOIL AT 4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-7)

RELINQUISHED BY:		RECEIVED BY:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE

RELEASED TO SHIPPER BY:		RECEIVED BY SHIPPER:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
GRAM, Inc	Self Johnson	Felt +	by Barclay

RELEASED TO LABORATORY BY (SHIPPER):		RECEIVED BY LABORATORY:	
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE
		Quen to re	

Samples rec'd in gael  
condition. HVOs contains  
pH 2.2. VOOH contains pH 2  
Amb. at 70°F  
Temp. 5.6, 6.4, 6.6  
9/1/94 5 9/18/94

BILL OF LADING # 825535436 41 18.05

DATE 9/18/94 TIME 0910

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## Method 8321

Client Name: Gram, Inc.  
Client ID: 01661001 (0.00,0.00,)  
Lab ID: 077541-0001-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 13 SEP 94  
Received: 08 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Units	Reporting Limit
Nitroglycerin	ND	ug/L	50
PETN	ND	ug/L	50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-233

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Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02461001 (0.00,0.00,)  
Lab ID: 077541-0002-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 13 SEP 94  
Received: 08 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Units	Reporting Limit
Nitroglycerin	ND	ug/L	50
PETN	ND	ug/L	50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-034

## Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

## Method 8321

Client Name: Gram, Inc.  
Client ID: 02462001 (0.00,0.00,)  
Lab ID: 077541-0003-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 13 SEP 94  
Received: 08 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Units	Reporting Limit
Nitroglycerin	ND	ug/L	50
PETN	ND	ug/L	50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-255

## Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.

Client ID: 02471001 (0.00,0.00,)

Lab ID: 077541-0004-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 13 SEP 94

Received: 08 SEP 94

Analyzed: 27 SEP 94

Parameter	Result	Units	Reporting Limit
Nitroglycerin	ND	ug/L	50
PETN	ND	ug/L	50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

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## Specialty Explosives by HPLC/MS

Enseco  
Corning Environmental Services

Method 8321

Client Name: Gram, Inc.  
Client ID: 02481001 (0.00,0.00,)  
Lab ID: 077541-0005-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 13 SEP 94  
Received: 08 SEP 94  
Analyzed: 27 SEP 94

Parameter	Result	Units	Reporting Limit
Nitroglycerin	ND	ug/L	50
PETN	ND	ug/L	50

ND = Not detected  
NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-287

QC LOT ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077541-0001-SA	AQUEOUS	8321-IRP-A	13 SEP 94-7A	13 SEP 94-7A
077541-0002-SA	AQUEOUS	8321-IRP-A	13 SEP 94-7A	13 SEP 94-7A
077541-0003-SA	AQUEOUS	8321-IRP-A	13 SEP 94-7A	13 SEP 94-7A
077541-0004-SA	AQUEOUS	8321-IRP-A	13 SEP 94-7A	13 SEP 94-7A
077541-0005-SA	AQUEOUS	8321-IRP-A	13 SEP 94-7A	13 SEP 94-7A

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METHOD BLANK REPORT  
Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8321-IRP-EXP-A			
Matrix: AQUEOUS			
QC Lot: 13 SEP 94-7A QC Run: 13 SEP 94-7A			
Nitroglycerin	ND	ug/L	50
PETN	ND	ug/L	50

LABORATORY CONTROL SAMPLE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 8321-IRP-A Explosives by HPLC/MS				
Matrix: AQUEOUS				
QC Lot: 13 SEP 94-7A QC Run: 13 SEP 94-7A				
Concentration Units: ug/L				
Nitroglycerin	800	1230	154	65-135
PETN	400	577	144	65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

1-2-10

## Nitroaromatics and Nitramines by HPLC

Enseco  
Coming Environmental Services

Method 8330

Client Name: Gram, Inc.  
Client ID: 01661001 (0.00,0.00,)  
Lab ID: 077541-0001-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 13 SEP 94  
Received: 08 SEP 94  
Analyzed: 16 SEP 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/L	13
sym-Trinitrobenzene	ND	ug/L	7.3
RDX	ND	ug/L	14
1,3-Dinitrobenzene	ND	ug/L	4.0
Nitrobenzene	ND	ug/L	6.4
2,4,6-Trinitrotoluene	ND	ug/L	6.9
Tetryl	ND	ug/L	4.0
2,4-Dinitrotoluene	ND	ug/L	5.7
2,6-Dinitrotoluene	ND	ug/L	9.4
2-Nitrotoluene	ND	ug/L	12
4-Nitrotoluene	ND	ug/L	8.5
3-Nitrotoluene	ND	ug/L	7.9

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-241

# Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

Method 8330

Client Name: Gram, Inc.

Client ID: 02461001 (0.00,0.00,)

Lab ID: 077541-0002-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 13 SEP 94

Received: 08 SEP 94

Analyzed: 16 SEP 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/L	13
sym-Trinitrobenzene	ND	ug/L	7.3
RDX	ND	ug/L	14
1,3-Dinitrobenzene	ND	ug/L	4.0
Nitrobenzene	ND	ug/L	6.4
2,4,6-Trinitrotoluene	ND	ug/L	6.9
Tetryl	ND	ug/L	4.0
2,4-Dinitrotoluene	ND	ug/L	5.7
2,6-Dinitrotoluene	ND	ug/L	9.4
2-Nitrotoluene	ND	ug/L	12
4-Nitrotoluene	ND	ug/L	8.5
3-Nitrotoluene	ND	ug/L	7.9

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

*Ja 26/2*

## Method 8330

Client Name: Gram, Inc.

Client ID: 02462001 (0.00,0.00,)

Lab ID: 077541-0003-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 13 SEP 94

Received: 08 SEP 94

Analyzed: 16 SEP 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/L	13
sym-Trinitrobenzene	ND	ug/L	7.3
RDX	ND	ug/L	14
1,3-Dinitrobenzene	ND	ug/L	4.0
Nitrobenzene	ND	ug/L	6.4
2,4,6-Trinitrotoluene	ND	ug/L	6.9
Tetryl	ND	ug/L	4.0
2,4-Dinitrotoluene	ND	ug/L	5.7
2,6-Dinitrotoluene	ND	ug/L	9.4
2-Nitrotoluene	ND	ug/L	12
4-Nitrotoluene	ND	ug/L	8.5
3-Nitrotoluene	ND	ug/L	7.9

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-243

Nitroaromatics and Nitramines by HPLC

Enseco  
Corning Environmental Services

Method 8330

Client Name: Gram, Inc.  
Client ID: 02471001 (0.00,0.00,)  
Lab ID: 077541-0004-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 13 SEP 94  
Received: 08 SEP 94  
Analyzed: 16 SEP 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/L	13
sym-Trinitrobenzene	ND	ug/L	7.3
RDX	ND	ug/L	14
1,3-Dinitrobenzene	ND	ug/L	4.0
Nitrobenzene	ND	ug/L	6.4
2,4,6-Trinitrotoluene	ND	ug/L	6.9
Tetryl	ND	ug/L	4.0
2,4-Dinitrotoluene	ND	ug/L	5.7
2,6-Dinitrotoluene	ND	ug/L	9.4
2-Nitrotoluene	ND	ug/L	12
4-Nitrotoluene	ND	ug/L	8.5
3-Nitrotoluene	ND	ug/L	7.9

ND = Not detected  
NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.  
Rev 230787

I-2414



## Method 8330

Client Name: Gram, Inc.

Client ID: 02481001 (0.00,0.00,)

Lab ID: 077541-0005-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 13 SEP 94

Received: 08 SEP 94

Analyzed: 16 SEP 94

Parameter	Result	Units	Reporting Limit
HMX	ND	ug/L	13
sym-Trinitrobenzene	ND	ug/L	7.3
RDX	ND	ug/L	14
1,3-Dinitrobenzene	ND	ug/L	4.0
Nitrobenzene	ND	ug/L	6.4
2,4,6-Trinitrotoluene	ND	ug/L	6.9
Tetryl	ND	ug/L	4.0
2,4-Dinitrotoluene	ND	ug/L	5.7
2,6-Dinitrotoluene	ND	ug/L	9.4
2-Nitrotoluene	ND	ug/L	12
4-Nitrotoluene	ND	ug/L	8.5
3-Nitrotoluene	ND	ug/L	7.9

ND = Not detected

NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I-2415

QC LOT ASSIGNMENT REPORT  
Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077541-0001-SA	AQUEOUS	8330-COE-A	13 SEP 94-7A	13 SEP 94-7A
077541-0002-SA	AQUEOUS	8330-COE-A	13 SEP 94-7A	13 SEP 94-7A
077541-0003-SA	AQUEOUS	8330-COE-A	13 SEP 94-7A	13 SEP 94-7A
077541-0004-SA	AQUEOUS	8330-COE-A	13 SEP 94-7A	13 SEP 94-7A
077541-0005-SA	AQUEOUS	8330-COE-A	13 SEP 94-7A	13 SEP 94-7A

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METHOD BLANK REPORT  
Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8330-IRPMS-1C-A			
Matrix: AQUEOUS			
QC Lot: 13 SEP 94-7A QC Run: 13 SEP 94-7A			
HMX	ND	ug/L	13
sym-Trinitrobenzene	ND	ug/L	7.3
RDX	ND	ug/L	14
1,3-Dinitrobenzene	ND	ug/L	4.0
Nitrobenzene	ND	ug/L	6.4
2,4,6-Trinitrotoluene	ND	ug/L	6.9
Tetryl	ND	ug/L	4.0
2,4-Dinitrotoluene	ND	ug/L	5.7
2,6-Dinitrotoluene	ND	ug/L	9.4
2-Nitrotoluene	ND	ug/L	12
4-Nitrotoluene	ND	ug/L	8.5
3-Nitrotoluene	ND	ug/L	7.9

J. 247

LABORATORY CONTROL SAMPLE REPORT  
Special Services - LC Mass Spectrometry

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 8330-COE-A Explosives by HPLC				
Matrix: AQUEOUS				
QC Lot: 13 SEP 94-7A      QC Run: 13 SEP 94-7A				
Concentration Units: ug/L				
HMX	50.0	47.9	96	65-135
sym-Trinitrobenzene	50.0	51.5	103	65-135
RDX	50.0	45.1	90	65-135
1,3-Dinitrobenzene	50.0	47.6	95	65-135
Nitrobenzene	50.0	46.0	92	65-135
2,4,6-Trinitrotoluene	50.0	50.5	101	65-135
Tetryl	50.0	54.4	109	50-110
2,4-Dinitrotoluene	50.0	50.9	102	65-135
2,6-Dinitrotoluene	50.0	50.7	101	65-135
2-Am-DNT	50.0	49.3	99	65-135
4-Am-DNT	50.0	49.0	98	65-135
2-Nitrotoluene	50.0	49.6	99	65-135
4-Nitrotoluene	50.0	49.7	99	65-135
3-Nitrotoluene	50.0	49.4	99	65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

I-2-48

## Semivolatile Organics

## Method 8270

Client Name: Gram, Inc.

Client ID: 01661001 (0.00,0.00,)

Lab ID: 077541-0001-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 14 SEP 94

Received: 08 SEP 94

Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Bromophenyl phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
bis(2-Chloroethoxy)- methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chlorophenyl phenyl ether	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
Chrysene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro- 2-methylphenol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

J-049

## Semivolatile Organics

Enseco  
Cleaning Environmental Services

## Method 8270

Client Name: Gram, Inc.

Client ID: 01661001 (0.00,0.00,)

Lab ID: 077541-0001-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 14 SEP 94

Received: 08 SEP 94

Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
Naphthalene	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Pentachlorophenol	ND	ug/L	50
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
Pyrene	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10

Surrogate	Recovery	
Nitrobenzene-d5	93	%
2-Fluorobiphenyl	94	%
Terphenyl-d14	95	%
Phenol-d5	34	%
2-Fluorophenol	52	%
2,4,6-Tribromophenol	67	%

ND = Not detected  
NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-250

Semivolatile Organics

Library Search

Method 8270

Client Name: Gram, Inc.

Client ID: 01661001

Lab ID: 077541-0001-SA

Matrix: AQUEOUS

Authorized: 08 Sep 94

Sampled: 07 Sep 94

Received: 08 Sep 94

Prepared: 14 Sep 94

Analyzed: 21 Sep 94

There were no tentatively identified compounds discovered for this sample.

ND=Not Detected

NA=Not Applicable

Reported by: Chris Jenkins

Approved by: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

T-251

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02461001 (0.00,0.00,)  
Lab ID: 077541-0002-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 14 SEP 94  
Received: 08 SEP 94  
Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Bromophenyl phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
bis(2-Chloroethoxy)- methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
4-Chlorophenyl phenyl ether	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro- 2-methylphenol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-252



## Semivolatile Organics

Enseco  
Corning Environmental Services

## Method 8270

Client Name: Gram, Inc.

Client ID: 02461001 (0.00,0.00,)

Lab ID: 077541-0002-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 14 SEP 94

Received: 08 SEP 94

Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
Naphthalene	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Pentachlorophenol	ND	ug/L	50
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
Pyrene	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10

Surrogate	Recovery	
Nitrobenzene-d5	87	%
2-Fluorobiphenyl	91	%
Terphenyl-d14	87	%
Phenol-d5	33	%
2-Fluorophenol	49	%
2,4,6-Tribromophenol	63	%

ND = Not detected

NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-253

Semivolatile Organics

Library Search

Method 8270

Client Name: Gram, Inc.

Client ID: 02461001

Lab ID: 077541-0002-SA

Matrix: AQUEOUS

Authorized: 08 Sep 94

Sampled: 07 Sep 94

Received: 08 Sep 94

Prepared: 14 Sep 94

Analyzed: 21 Sep 94

There were no tentatively identified compounds discovered for this sample.

ND=Not Detected  
NA=Not Applicable

Reported by: Chris Jenkins

Approved by: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-254

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02462001 (0.00,0.00,)  
Lab ID: 077541-0003-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 14 SEP 94  
Received: 08 SEP 94  
Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Bromophenyl phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
bis(2-Chloroethoxy)- methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
4-Chlorophenyl phenyl ether	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro- 2-methylphenol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10

(continued on following page)

ND = Not detected  
NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-255

## Semivolatile Organics

Enseco  
Commy Environmental Services

## Method 8270

Client Name: Gram, Inc.  
Client ID: 02462001 (0.00,0.00,)  
Lab ID: 077541-0003-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: 14 SEP 94  
Received: 08 SEP 94  
Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
Naphthalene	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Pentachlorophenol	ND	ug/L	50
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
Pyrene	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10

Surrogate	Recovery	
Nitrobenzene-d5	95	%
2-Fluorobiphenyl	92	%
Terphenyl-d14	95	%
Phenol-d5	40	%
2-Fluorophenol	57	%
2,4,6-Tribromophenol	69	%

ND = Not detected  
NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-256

Semivolatile Organics

Library Search

Method 8270

Client Name: Gram, Inc.

Client ID: 02462001

Lab ID: 077541-0003-SA

Matrix: AQUEOUS

Authorized: 08 Sep 94

Sampled: 07 Sep 94

Received: 08 Sep 94

Prepared: 14 Sep 94

Analyzed: 21 Sep 94

There were no tentatively identified compounds discovered for this sample.

ND=Not Detected  
NA=Not Applicable

Reported by: Chris Jenkins

Approved by: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-207

## Semivolatile Organics

Enseco  
 Caring Environmental Services

## Method 8270

Client Name: Gram, Inc.

Client ID: 02471001 (0.00,0.00,)

Lab ID: 077541-0004-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 14 SEP 94

Received: 08 SEP 94

Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Bromophenyl			
phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
bis(2-Chloroethoxy)-			
methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chlorophenyl			
phenyl ether	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
Chrysene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro-			
2-methylphenol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

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Semivolatile Organics

Method 8270

Client Name: Gram, Inc.

Client ID: 02471001 (0.00,0.00,)

Lab ID: 077541-0004-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 14 SEP 94

Received: 08 SEP 94

Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
Naphthalene	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Pentachlorophenol	ND	ug/L	50
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
Pyrene	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10

Surrogate Recovery

Nitrobenzene-d5	90	%
2-Fluorobiphenyl	93	%
Terphenyl-d14	90	%
Phenol-d5	34	%
2-Fluorophenol	51	%
2,4,6-Tribromophenol	63	%

ND = Not detected

NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-259

Semivolatile Organics

Library Search

Method 8270

Client Name: Gram, Inc.

Client ID: 02471001

Lab ID: 077541-0004-SA

Matrix: AQUEOUS

Authorized: 08 Sep 94

Sampled: 07 Sep 94

Received: 08 Sep 94

Prepared: 14 Sep 94

Analyzed: 21 Sep 94

There were no tentatively identified compounds discovered for this sample.

ND=Not Detected

NA=Not Applicable

Reported by: Chris Jenkins

Approved by: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-260



## Semivolatile Organics

**Enseco**  
 Coming Environmental Services

## Method 8270

Client Name: Gram, Inc.

Client ID: 02481001 (0.00,0.00,)

Lab ID: 077541-0005-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: 14 SEP 94

Received: 08 SEP 94

Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	50
Benzoic acid	ND	ug/L	20
4-Bromophenyl			
phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
bis(2-Chloroethoxy)-			
methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
4-Chlorophenyl			
phenyl ether	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro-			
2-methylphenol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10

(continued on following page)

ND = Not detected

NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

I-261

Semivolatile Organics

Method 8270

Client Name: Gram, Inc.  
Client ID: 02481001  
Lab ID: 077541-0005-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94

(0.00,0.00,)

Sampled: 07 SEP 94  
Prepared: 14 SEP 94

Received: 08 SEP 94  
Analyzed: 21 SEP 94

Parameter	Result	Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
Naphthalene	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di-n-propylamine	ND	ug/L	10
Pentachlorophenol	ND	ug/L	50
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
Pyrene	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10

Surrogate	Recovery	
Nitrobenzene-d5	88	%
2-Fluorobiphenyl	95	%
Terphenyl-d14	90	%
Phenol-d5	36	%
2-Fluorophenol	50	%
2,4,6-Tribromophenol	65	%

ND = Not detected  
NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-262

Semivolatile Organics

Library Search

Method 8270

Client Name: Gram, Inc.

Client ID: 02481001

Lab ID: 077541-0005-SA

Matrix: AQUEOUS

Authorized: 08 Sep 94

Sampled: 07 Sep 94

Received: 08 Sep 94

Prepared: 14 Sep 94

Analyzed: 21 Sep 94

ND=Not Detected  
NA=Not Applicable

Reported by: Chris Jenkins

Approved by: Steve Rogers

The cover letter is an integral part of this report.  
Rev 230787

I-263

QC LOT ASSIGNMENT REPORT  
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077541-0001-SA	AQUEOUS	8270-IRP-A	14 SEP 94-11A	14 SEP 94-11A
077541-0002-SA	AQUEOUS	8270-IRP-A	14 SEP 94-11A	14 SEP 94-11A
077541-0003-SA	AQUEOUS	8270-IRP-A	14 SEP 94-11A	14 SEP 94-11A
077541-0004-SA	AQUEOUS	8270-IRP-A	14 SEP 94-11A	14 SEP 94-11A
077541-0005-SA	AQUEOUS	8270-IRP-A	14 SEP 94-11A	14 SEP 94-11A

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METHOD BLANK REPORT  
Semivolatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-A			
Matrix: AQUEOUS			
QC Lot: 14 SEP 94-11A QC Run: 14 SEP 94-11A			
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10
Benzo(b)fluoranthene	ND	ug/L	10
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10
Benzo(g,h,i)perylene	ND	ug/L	10
Benzo(k)fluoranthene	ND	ug/L	10
Benzoic acid	ND	ug/L	50
Benzo(l)alcohol	ND	ug/L	20
4-Bromophenyl phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
bis(2-Chloroethoxy)- methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	20
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chloroaniline	ND	ug/L	20
4-Chlorophenyl phenyl ether	ND	ug/L	10
Chrysene	ND	ug/L	10
Di-n-butyl phthalate	ND	ug/L	10
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro- 2-methylphenol	ND	ug/L	50
2,4-Dinitrophenol	ND	ug/L	50
2,4-Dinitrotoluene	ND	ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10

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METHOD BLANK REPORT  
Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-A			
Matrix: AQUEOUS			
QC Lot: 14 SEP 94-11A QC Run: 14 SEP 94-11A			
bis(2-Ethylhexyl)- phthalate	ND	ug/L	10
Fluoranthene	ND	ug/L	10
Fluorene	ND	ug/L	10
Hexachlorobenzene	ND	ug/L	10
Hexachlorobutadiene	ND	ug/L	10
Hexachlorocyclopentadiene	ND	ug/L	10
Hexachloroethane	ND	ug/L	10
Indeno(1,2,3-cd)pyrene	ND	ug/L	10
Isophorone	ND	ug/L	10
2-Methylnaphthalene	ND	ug/L	10
2-Methylphenol	ND	ug/L	10
4-Methylphenol	ND	ug/L	10
Naphthalene	ND	ug/L	10
2-Nitroaniline	ND	ug/L	50
3-Nitroaniline	ND	ug/L	50
4-Nitroaniline	ND	ug/L	50
Nitrobenzene	ND	ug/L	10
2-Nitrophenol	ND	ug/L	10
4-Nitrophenol	ND	ug/L	50
N-Nitrosodiphenylamine	ND	ug/L	10
N-Nitroso-di- n-propylamine	ND	ug/L	10
Pentachlorophenol	ND	ug/L	50
Phenanthrene	ND	ug/L	10
Phenol	ND	ug/L	10
Pyrene	ND	ug/L	10
1,2,4-Trichlorobenzene	ND	ug/L	10
2,4,5-Trichlorophenol	ND	ug/L	50
2,4,6-Trichlorophenol	ND	ug/L	10

LABORATORY CONTROL SAMPLE REPORT  
Semivolatiles Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits

Category: 8270-IRP-A Semivolatiles Organics  
(Contain all compounds for IRPMS)

Matrix: AQUEOUS

QC Lot: 14 SEP 94-11A QC Run: 14 SEP 94-11A

Concentration Units: ug/L

Phenol	200	65.5	33	22-51
bis(2-Chloroethyl) ether	100	93.9	94	35-110
2-Chlorophenol	200	169	84	44-112
1,3-Dichlorobenzene	100	96.0	96	6-86
1,4-Dichlorobenzene	100	95.5	96	11-87
Benzyl alcohol	100	79.4	79	36-101
1,2-Dichlorobenzene	100	96.9	97	14-90
2-Methylphenol	200	149	74	40-117
2,2'-Oxybis(1-chloropropane)	100	95.8	96	33-113
4-Methylphenol	200	137	68	36-109
N-Nitroso-di-n-propylamine	100	77.9	78	37-114
Hexachloroethane	100	92.0	92	0-84
Nitrobenzene	100	93.8	94	32-114
Isophorone	100	75.8	76	40-119
2-Nitrophenol	200	168	84	40-130
2,4-Dimethylphenol	200	148	74	44-122
Benzoic acid	200	78.3	39	0-72
bis(2-Chloroethoxy)-methane	100	94.3	94	36-118
2,4-Dichlorophenol	200	173	86	40-125
1,2,4-Trichlorobenzene	100	92.3	92	10-98
Naphthalene	100	92.7	93	28-105
4-Chloroaniline	100	44.7	45	40-114
Hexachlorobutadiene	100	93.1	93	0-94
4-Chloro-3-methylphenol	200	179	90	22-147
2-Methylnaphthalene	100	99.0	99	22-119
Hexachlorocyclopentadiene	100	76.5	76	0-93
2,4,6-Trichlorophenol	200	175	88	44-127
2,4,5-Trichlorophenol	200	206	103	46-132
2-Chloronaphthalene	100	97.6	98	25-120
2-Nitroaniline	100	93.2	93	19-68
Dimethyl phthalate	100	87.4	87	0-88
Acenaphthylene	100	100	100	31-117
2,6-Dinitrotoluene	100	95.5	96	52-120
3-Nitroaniline	100	93.7	94	34-153
Acenaphthene	100	98.6	99	47-145
2,4-Dinitrophenol	200	155	78	17-160
4-Nitrophenol	200	74.0	37	16-56
Dibenzofuran	100	100	100	43-116
2,4-Dinitrotoluene	100	102	102	58-121
Diethyl phthalate	100	95.6	96	0-112

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE REPORT  
Semivolatile Organics by GC/MS

(cont.)

Analyte	Concentration		Accuracy(%) (cont.)	
	Spiked	Measured	LCS	Limits
Category: 8270-IRP-A Semivolatile Organics (Contain all compounds for IRPMS)				
Matrix: AQUEOUS				
QC Lot: 14 SEP 94-11A QC Run: 14 SEP 94-11A				
Concentration Units: ug/L				
4-Chlorophenyl phenyl ether	100	98.6	99	45-116
Fluorene	100	97.4	97	59-121
4-Nitroaniline	100	93.6	94	52-134
4,6-Dinitro- 2-methylphenol	200	194	97	45-149
N-Nitrosodiphenylamine	100	102	102	23-243
4-Bromophenyl phenyl ether	100	101	101	46-127
Hexachlorobenzene	100	104	104	54-126
Pentachlorophenol	200	184	92	44-142
Phenanthrene	100	101	101	57-123
Anthracene	100	96.2	96	59-125
Di-n-butyl phthalate	100	98.6	99	53-127
Fluoranthene	100	96.7	97	57-129
Pyrene	100	104	104	60-130
Butyl benzyl phthalate	100	94.7	95	52-125
3,3'-Dichlorobenzidine	100	65.0	65	42-146
Benzo(a)anthracene	100	100	100	59-126
Chrysene	100	99.8	100	59-127
bis(2-Ethylhexyl)- phthalate	100	93.2	93	57-129
Di-n-octyl phthalate	100	89.1	89	50-135
Benzo(b)fluoranthene	100	98.2	98	55-129
Benzo(k)fluoranthene	100	110	110	55-134
Benzo(a)pyrene	100	98.9	99	55-130
Indeno(1,2,3-cd)pyrene	100	95.9	96	64-118
Dibenz(a,h)anthracene	100	97.7	98	59-121
Benzo(g,h,i)perylene	100	95.7	96	62-117

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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SINGLE CONTROL SAMPLE REPORT  
Semivolatile Organics by GC/MS

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	SCS	Limits
Category: 8270-IRP-A				
Matrix: AQUEOUS				
QC Lot: 14 SEP 94-11A QC Run: 14 SEP 94-11A				
Concentration Units: ug/L				
Nitrobenzene-d5	100	91	91	18-105
2-Fluorobiphenyl	100	94	94	21-114
Terphenyl-d14	100	94	94	45-143
Phenol-d5	200	74	37	10- 47
2-Fluorophenol	200	114	57	19- 85
2,4,6-Tribromophenol	200	145	72	22-117

Calculations are performed before rounding to avoid round-off errors in calculated results.

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## METALS

Enseco  
Corning Environmental Service

(Water - Total)

Client Name: Gram, Inc.

Client ID: 01661001 (0.00,0.00,)

Lab ID: 077541-0001-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: See Below

Received: 08 SEP 94

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Antimony	ND	mg/L	0.40	6010	13 SEP 94	16 SEP 94
Arsenic	ND	mg/L	0.0050	7060	16 SEP 94	19 SEP 94
Barium	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Beryllium	ND	mg/L	0.0030	6010	13 SEP 94	16 SEP 94
Cadmium	ND	mg/L	0.040	6010	13 SEP 94	16 SEP 94
Calcium	0.84	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Chromium	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Cobalt	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Copper	ND	mg/L	0.060	6010	13 SEP 94	16 SEP 94
Iron	0.40	mg/L	0.10	6010	13 SEP 94	16 SEP 94
Lead	ND	mg/L	0.0050	7421	16 SEP 94	19 SEP 94
Magnesium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Manganese	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Mercury	ND	mg/L	0.00020	7470	12 SEP 94	12 SEP 94
Molybdenum	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Nickel	ND	mg/L	0.15	6010	13 SEP 94	16 SEP 94
Potassium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Selenium	ND	mg/L	0.0050	7740	16 SEP 94	20 SEP 94
Silver	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Sodium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Thallium	ND	mg/L	0.0022	7841	16 SEP 94	20 SEP 94
Vanadium	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Zinc	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94

ND = Not detected

NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.

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**METALS**

**Enseco**  
Controlling Environmental Services

(Water - Total)

Client Name: Gram, Inc.		
Client ID: 02461001	(0.00,0.00,)	
Lab ID: 077541-0002-SA		
Matrix: AQUEOUS	Sampled: 07 SEP 94	Received: 08 SEP 94
Authorized: 08 SEP 94	Prepared: See Below	Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Antimony	ND	mg/L	0.40	6010	13 SEP 94	16 SEP 94
Arsenic	ND	mg/L	0.0050	7060	16 SEP 94	19 SEP 94
Barium	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Beryllium	ND	mg/L	0.0030	6010	13 SEP 94	16 SEP 94
Cadmium	ND	mg/L	0.040	6010	13 SEP 94	16 SEP 94
Calcium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Chromium	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Cobalt	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Copper	ND	mg/L	0.060	6010	13 SEP 94	16 SEP 94
Iron	ND	mg/L	0.10	6010	13 SEP 94	16 SEP 94
Lead	ND	mg/L	0.0050	7421	16 SEP 94	19 SEP 94
Magnesium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Manganese	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Mercury	ND	mg/L	0.00020	7470	12 SEP 94	12 SEP 94
Molybdenum	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Nickel	ND	mg/L	0.15	6010	13 SEP 94	16 SEP 94
Potassium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Selenium	ND	mg/L	0.0050	7740	16 SEP 94	20 SEP 94
Silver	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Sodium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Thallium	ND	mg/L	0.0022	7841	16 SEP 94	20 SEP 94
Vanadium	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Zinc	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94

ND = Not detected  
 NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
 Rev 230787

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METALS

Enseco  
Comag Environmental Services

(Water - Total)

Client Name: Gram, Inc.  
Client ID: 02462001 (0.00,0.00,)  
Lab ID: 077541-0003-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: See Below  
Received: 08 SEP 94  
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Antimony	ND	mg/L	0.40	6010	13 SEP 94	16 SEP 94
Arsenic	ND	mg/L	0.0050	7060	16 SEP 94	19 SEP 94
Barium	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Beryllium	ND	mg/L	0.0030	6010	13 SEP 94	16 SEP 94
Cadmium	ND	mg/L	0.040	6010	13 SEP 94	16 SEP 94
Calcium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Chromium	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Cobalt	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Copper	ND	mg/L	0.060	6010	13 SEP 94	16 SEP 94
Iron	ND	mg/L	0.10	6010	13 SEP 94	16 SEP 94
Lead	ND	mg/L	0.0050	7421	16 SEP 94	19 SEP 94
Magnesium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Manganese	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Mercury	ND	mg/L	0.00020	7470	12 SEP 94	12 SEP 94
Molybdenum	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Nickel	ND	mg/L	0.15	6010	13 SEP 94	16 SEP 94
Potassium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Selenium	ND	mg/L	0.0050	7740	16 SEP 94	20 SEP 94
Silver	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Sodium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Thallium	ND	mg/L	0.0022	7841	16 SEP 94	20 SEP 94
Vanadium	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Zinc	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

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**METALS**

**Enseco**  
Corning Environmental Services

(Water - Total)

Client Name: Gram, Inc.  
Client ID: 02471001 (0.00,0.00,)  
Lab ID: 077541-0004-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: See Below  
Received: 08 SEP 94  
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Antimony	ND	mg/L	0.40	6010	13 SEP 94	16 SEP 94
Arsenic	ND	mg/L	0.0050	7060	16 SEP 94	19 SEP 94
Barium	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Beryllium	ND	mg/L	0.0030	6010	13 SEP 94	16 SEP 94
Cadmium	ND	mg/L	0.040	6010	13 SEP 94	16 SEP 94
Calcium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Chromium	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Cobalt	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Copper	ND	mg/L	0.060	6010	13 SEP 94	16 SEP 94
Iron	ND	mg/L	0.10	6010	13 SEP 94	16 SEP 94
Lead	ND	mg/L	0.0050	7421	16 SEP 94	19 SEP 94
Magnesium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Manganese	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Mercury	ND	mg/L	0.00020	7470	12 SEP 94	12 SEP 94
Molybdenum	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Nickel	ND	mg/L	0.15	6010	13 SEP 94	16 SEP 94
Potassium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Selenium	ND	mg/L	0.0050	7740	16 SEP 94	20 SEP 94
Silver	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Sodium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Thallium	ND	mg/L	0.0022	7841	16 SEP 94	20 SEP 94
Vanadium	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Zinc	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

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**METALS**

**Enseco**  
Corning Environmental Services

(Water - Total)

Client Name: Gram, Inc.  
Client ID: 02481001  
Lab ID: 077541-0005-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94

(0.00,0.00,)

Sampled: 07 SEP 94  
Prepared: See Below

Received: 08 SEP 94  
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Antimony	ND	mg/L	0.40	6010	13 SEP 94	16 SEP 94
Arsenic	ND	mg/L	0.0050	7060	16 SEP 94	19 SEP 94
Barium	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Beryllium	ND	mg/L	0.0030	6010	13 SEP 94	16 SEP 94
Cadmium	ND	mg/L	0.040	6010	13 SEP 94	16 SEP 94
Calcium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Chromium	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Cobalt	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Copper	ND	mg/L	0.060	6010	13 SEP 94	16 SEP 94
Iron	ND	mg/L	0.10	6010	13 SEP 94	16 SEP 94
Lead	ND	mg/L	0.0050	7421	16 SEP 94	19 SEP 94
Magnesium	ND	mg/L	0.50	6010	13 SEP 94	16 SEP 94
Manganese	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94
Mercury	ND	mg/L	0.00020	7470	12 SEP 94	12 SEP 94
Molybdenum	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Nickel	ND	mg/L	0.15	6010	13 SEP 94	16 SEP 94
Potassium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Selenium	ND	mg/L	0.0050	7740	16 SEP 94	20 SEP 94
Silver	ND	mg/L	0.070	6010	13 SEP 94	16 SEP 94
Sodium	ND	mg/L	5.0	6010	13 SEP 94	16 SEP 94
Thallium	ND	mg/L	0.0022	7841	16 SEP 94	20 SEP 94
Vanadium	ND	mg/L	0.080	6010	13 SEP 94	16 SEP 94
Zinc	ND	mg/L	0.020	6010	13 SEP 94	16 SEP 94

ND = Not detected  
NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.  
Rev 230787

I-075

QC LOT ASSIGNMENT REPORT  
 Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077541-0001-SA	AQUEOUS	ICP-AT	13 SEP 94-U	13 SEP 94-U
077541-0001-SA	AQUEOUS	7470-IRPAT	12 SEP 94-BX	12 SEP 94-BX
077541-0001-SA	AQUEOUS	AS-OBG-AT	16 SEP 94-U	16 SEP 94-U
077541-0001-SA	AQUEOUS	7421-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0001-SA	AQUEOUS	7740-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0001-SA	AQUEOUS	7841-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0002-SA	AQUEOUS	ICP-AT	13 SEP 94-U	13 SEP 94-U
077541-0002-SA	AQUEOUS	7470-IRPAT	12 SEP 94-BX	12 SEP 94-BX
077541-0002-SA	AQUEOUS	AS-OBG-AT	16 SEP 94-U	16 SEP 94-U
077541-0002-SA	AQUEOUS	7421-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0002-SA	AQUEOUS	7740-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0002-SA	AQUEOUS	7841-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0003-SA	AQUEOUS	ICP-AT	13 SEP 94-U	13 SEP 94-U
077541-0003-SA	AQUEOUS	7470-IRPAT	12 SEP 94-BX	12 SEP 94-BX
077541-0003-SA	AQUEOUS	AS-OBG-AT	16 SEP 94-U	16 SEP 94-U
077541-0003-SA	AQUEOUS	7421-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0003-SA	AQUEOUS	7740-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0003-SA	AQUEOUS	7841-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0004-SA	AQUEOUS	ICP-AT	13 SEP 94-U	13 SEP 94-U
077541-0004-SA	AQUEOUS	7470-IRPAT	12 SEP 94-BX	12 SEP 94-BX
077541-0004-SA	AQUEOUS	AS-OBG-AT	16 SEP 94-U	16 SEP 94-U
077541-0004-SA	AQUEOUS	7421-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0004-SA	AQUEOUS	7740-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0004-SA	AQUEOUS	7841-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0005-SA	AQUEOUS	ICP-AT	13 SEP 94-U	13 SEP 94-U
077541-0005-SA	AQUEOUS	7470-IRPAT	12 SEP 94-BX	12 SEP 94-BX
077541-0005-SA	AQUEOUS	AS-OBG-AT	16 SEP 94-U	16 SEP 94-U
077541-0005-SA	AQUEOUS	7421-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0005-SA	AQUEOUS	7740-IRPAT	16 SEP 94-U	16 SEP 94-U
077541-0005-SA	AQUEOUS	7841-IRPAT	16 SEP 94-U	16 SEP 94-U

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METHOD BLANK REPORT  
Metals Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: ICP-IRPMS-AT			
Matrix: AQUEOUS			
QC Lot: 13 SEP 94-U QC Run: 13 SEP 94-U			
Aluminum	ND	mg/L	0.50
Antimony	ND	mg/L	0.40
Barium	ND	mg/L	0.020
Beryllium	ND	mg/L	0.0030
Cadmium	ND	mg/L	0.040
Calcium	ND	mg/L	0.50
Chromium	ND	mg/L	0.070
Cobalt	ND	mg/L	0.070
Copper	ND	mg/L	0.060
Iron	ND	mg/L	0.10
Magnesium	ND	mg/L	0.50
Manganese	ND	mg/L	0.020
Molybdenum	ND	mg/L	0.080
Nickel	ND	mg/L	0.15
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.070
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.080
Zinc	ND	mg/L	0.020

Test: HG-CVAA-COE-AT  
Matrix: AQUEOUS  
QC Lot: 12 SEP 94-BX QC Run: 12 SEP 94-BX

Mercury	ND	mg/L	0.00020
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Test: AS-FAA-GAFB-IRPMS-AT  
Matrix: AQUEOUS  
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U

Arsenic	ND	mg/L	0.0050
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I-077

METHOD BLANK REPORT  
Metals Analysis and Preparation (cont.)

Analyte	Result	Units	Reporting Limit
Test: PB-FAA-GAFB-IRPMS-AT Matrix: AQUEOUS QC Lot: 16 SEP 94-U    QC Run: 16 SEP 94-U			
Lead	ND	mg/L	0.0050
Test: SE-FAA-GAFB-IRPMS-AT Matrix: AQUEOUS QC Lot: 16 SEP 94-U    QC Run: 16 SEP 94-U			
Selenium	ND	mg/L	0.0050
Test: TL-FAA-GAFB-IRPMS-AT Matrix: AQUEOUS QC Lot: 16 SEP 94-U    QC Run: 16 SEP 94-U			
Thallium	ND	mg/L	0.0022

T-078

METHOD BLANK REPORT  
Metals Analysis and Preparation  
Project: 077541

Test: ICP-IRPMS-AT ICP Quantitative Scan (27 Total Metals)  
Matrix: AQUEOUS  
QC Lot: 13 SEP 94-U QC Run: 13 SEP 94-U

Analyte	Result	Units	Reporting Limit
Aluminum	ND	mg/L	0.50
Antimony	ND	mg/L	0.40
Barium	ND	mg/L	0.020
Beryllium	ND	mg/L	0.0030
Cadmium	ND	mg/L	0.040
Calcium	ND	mg/L	0.50
Chromium	ND	mg/L	0.070
Cobalt	ND	mg/L	0.070
Copper	ND	mg/L	0.060
Iron	ND	mg/L	0.10
Magnesium	ND	mg/L	0.50
Manganese	ND	mg/L	0.020
Molybdenum	ND	mg/L	0.080
Nickel	ND	mg/L	0.15
Potassium	ND	mg/L	5.0
Silver	ND	mg/L	0.070
Sodium	ND	mg/L	5.0
Vanadium	ND	mg/L	0.080
Zinc	ND	mg/L	0.020

Test: HG-CVAA-COE-AT Mercury, Cold Vapor AA (Total)  
Matrix: AQUEOUS  
QC Lot: 12 SEP 94-BX QC Run: 12 SEP 94-BX

Analyte	Result	Units	Reporting Limit
Mercury	ND	mg/L	0.00020

Test: AS-FAA-GAFB-IRPMS-AT Arsenic, Furnace AA (Total)  
Matrix: AQUEOUS  
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U

Analyte	Result	Units	Reporting Limit
Arsenic	ND	mg/L	0.0050

ND = Not Detected

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METHOD BLANK REPORT  
Metals Analysis and Preparation  
Project: 077541

Test: PB-FAA-GAFB-IRPMS-AT Lead, Furnace AA  
Matrix: AQUEOUS  
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U

Analyte	Result	Units	Reporting Limit
Lead	ND	mg/L	0.0050

Test: SE-FAA-GAFB-IRPMS-AT Selenium, Furnace AA (Total)  
Matrix: AQUEOUS  
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U

Analyte	Result	Units	Reporting Limit
Selenium	ND	mg/L	0.0050

Test: TL-FAA-GAFB-IRPMS-AT Thallium, Furnace AA (Total)  
Matrix: AQUEOUS  
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U

Analyte	Result	Units	Reporting Limit
Thallium	ND	mg/L	0.0022

ND = Not Detected

I-280

LABORATORY CONTROL SAMPLE REPORT  
Metals Analysis and Preparation

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: ICP-AT ICP Metals				
Matrix: AQUEOUS				
QC Lot: 13 SEP 94-U QC Run: 13 SEP 94-U				
Concentration Units: mg/L				
Aluminum	2.00	2.04	102	80-120
Antimony	0.500	0.494	99	80-120
Arsenic	0.500	0.495	99	80-120
Barium	2.00	2.06	103	80-120
Beryllium	0.0500	0.0522	104	80-120
Boron	1.00	1.01	101	80-120
Cadmium	0.0500	0.0476	95	80-120
Calcium	100	100	100	80-120
Chromium	0.200	0.201	101	80-120
Cobalt	0.500	0.497	99	80-120
Copper	0.250	0.254	102	80-120
Iron	1.00	1.01	101	80-120
Lead	0.500	0.512	102	80-120
Lithium	0.200	0.203	101	80-120
Magnesium	50.0	49.7	99	80-120
Manganese	0.500	0.502	100	80-120
Molybdenum	0.200	0.203	101	80-120
Nickel	0.500	0.534	107	80-120
Potassium	50.0	48.6	97	80-120
Selenium	2.00	2.03	101	80-120
Silver	0.0500	0.0469	94	80-120
Sodium	100	103	103	80-120
Thallium	2.00	2.03	102	80-120
Tin	4.00	3.92	98	80-120
Titanium	2.00	2.01	101	80-120
Vanadium	0.500	0.503	101	80-120
Zinc	0.500	0.495	99	80-120

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7470-IRPAT Mercury by CVAA				
STATIC QC LIMITS - DO NOT UPDATE				
Matrix: AQUEOUS				
QC Lot: 12 SEP 94-BX QC Run: 12 SEP 94-BX				
Concentration Units: mg/L				
Mercury	0.00100	0.00103	103	80-120

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE REPORT  
 Metals Analysis and Preparation

(cont.)

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: AS-OBG-AT Arsenic, Furnace AA				
Matrix: AQUEOUS				
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U				
Concentration Units: mg/L				
Arsenic	0.0400	0.0449	112	80-120

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7421-IRPAT Lead, Furnance AA (Total)				
Matrix: AQUEOUS				
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U				
Concentration Units: mg/L				
Lead	0.0200	0.0223	111	83-113

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7740-IRPAT Selenium, Furnace AA				
Matrix: AQUEOUS				
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U				
Concentration Units: mg/L				
Selenium	0.0200	0.0219	110	80-120

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: 7841-IRPAT Thallium, Furnace AA				
Matrix: AQUEOUS				
QC Lot: 16 SEP 94-U QC Run: 16 SEP 94-U				
Concentration Units: mg/L				
Thallium	0.0500	0.0500	100	80-120

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Water)

Client Name: Gram, Inc.  
Client ID: 01661001 (0.00,0.00,)  
Lab ID: 077541-0001-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: See Below  
Received: 08 SEP 94  
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/L	0.010	9012 Modified	13 SEP 94	14 SEP 94
Nitrate + Nitrite (as N)	ND	mg/L	0.050	353.2	NA	09 SEP 94

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
Rev 230787

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## GENERAL INORGANICS

Enseco  
Coming Environmental Services

(Water)

Client Name: Gram, Inc.  
Client ID: 02461001 (0.00,0.00,)  
Lab ID: 077541-0002-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: See Below  
Received: 08 SEP 94  
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/L	0.010	9012 Modified	13 SEP 94	14 SEP 94
Nitrate + Nitrite (as N)	ND	mg/L	0.050	353.2	NA	09 SEP 94

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
Rev 230787

J. 224



## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Water)

Client Name: Gram, Inc.

Client ID: 02462001 (0.00,0.00,)

Lab ID: 077541-0003-SA

Matrix: AQUEOUS

Authorized: 08 SEP 94

Sampled: 07 SEP 94

Prepared: See Below

Received: 08 SEP 94

Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/L	0.010	9012 Modified	13 SEP 94	14 SEP 94
Nitrate + Nitrite (as N)	ND	mg/L	0.050	353.2	NA	09 SEP 94

ND = Not detected

NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

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GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Water)

Client Name: Gram, Inc.  
Client ID: 02471001 (0.00,0.00,)  
Lab ID: 077541-0004-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94  
Sampled: 07 SEP 94  
Prepared: See Below  
Received: 08 SEP 94  
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/L	0.010	9012 Modified	13 SEP 94	14 SEP 94
Nitrate + Nitrite (as N)	ND	mg/L	0.050	353.2	NA	09 SEP 94

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
Rev 230787

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## GENERAL INORGANICS

Enseco  
Corning Environmental Services

(Water)

Client Name: Gram, Inc.  
Client ID: 02481001  
Lab ID: 077541-0005-SA  
Matrix: AQUEOUS  
Authorized: 08 SEP 94

(0.00,0.00,)

Sampled: 07 SEP 94  
Prepared: See Below

Received: 08 SEP 94  
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/L	0.010	9012 Modified	13 SEP 94	14 SEP 94
Nitrate + Nitrite (as N)	ND	mg/L	0.050	353.2	NA	09 SEP 94

ND = Not detected  
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.  
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QC LOT ASSIGNMENT REPORT  
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077541-0001-SA	AQUEOUS	NO3&NO2-A	09 SEP 94-A	09 SEP 94-A
077541-0001-SA	AQUEOUS	CN-A	13 SEP 94-L	13 SEP 94-L
077541-0002-SA	AQUEOUS	NO3&NO2-A	09 SEP 94-A	09 SEP 94-A
077541-0002-SA	AQUEOUS	CN-A	13 SEP 94-L	13 SEP 94-L
077541-0003-SA	AQUEOUS	NO3&NO2-A	09 SEP 94-A	09 SEP 94-A
077541-0003-SA	AQUEOUS	CN-A	13 SEP 94-L	13 SEP 94-L
077541-0004-SA	AQUEOUS	NO3&NO2-A	09 SEP 94-A	09 SEP 94-A
077541-0004-SA	AQUEOUS	CN-A	13 SEP 94-L	13 SEP 94-L
077541-0005-SA	AQUEOUS	NO3&NO2-A	09 SEP 94-A	09 SEP 94-A
077541-0005-SA	AQUEOUS	CN-A	13 SEP 94-L	13 SEP 94-L

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METHOD BLANK REPORT  
Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
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Test: NO3+NO2-A

Matrix: AQUEOUS

QC Lot: 09 SEP 94-A QC Run: 09 SEP 94-A

Nitrate + Nitrite  
(as N)

ND

mg/L

0.050

Test: CN-9012-AT

Matrix: AQUEOUS

QC Lot: 13 SEP 94-L QC Run: 13 SEP 94-L

Cyanide, Total

ND

mg/L

0.010

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LABORATORY CONTROL SAMPLE REPORT  
Wet Chemistry Analysis and Preparation

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: NO3&NO2-A Nitrate plus nitrite				
STATIC QC LIMITS - DO NOT UPDATE				
Matrix: AQUEOUS				
QC Lot: 09 SEP 94-A QC Run: 09 SEP 94-A				
Concentration Units: mg/L				
Nitrate + Nitrite (as N)	0.500	0.489	98	90-110

Analyte	Concentration		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Category: CN-A Cyanide				
Matrix: AQUEOUS				
QC Lot: 13 SEP 94-L QC Run: 13 SEP 94-L				
Concentration Units: mg/L				
Cyanide, Total	0.100	0.0900	90	73-111

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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